IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF VIRGINIA NORFOLK DIVISION

Latasha Holloway, et al., **Plaintiffs,** **v.** **City of Virginia Beach, et al.,** **Defendants.**	**Civil Action No. 2:18-cv-0069**

Defendants' Memorandum of Law in Support of Motion for Summary Judgment

EXHIBIT ONE

Expert Report of Anthony E. Fairfax

Expert Report of Anthony E. Fairfax

Anthony E. Fairfax
16 Castle Haven Road
Hampton, VA 23666

July 15, 2019

I. Introduction

I have been retained by counsel representing the Plaintiffs in this lawsuit to determine whether it is possible to draw an Illustrative Plan with one or more majority Latino (Hispanic), Black, and Asian ("HBA") combined districts in the City of Virginia Beach, VA. In addition, I was asked to review past and recent demographics pertaining to the city.[1]

The City of Virginia Beach, VA currently has an eleven-member City Council structure. Three (3) Council members and the Mayor serve "at large" with no district residency requirement. The other seven (7) council members are required to live in the district that they represent. However, all city council members are elected at large and not within the district that they represent.

II. Background and Qualifications

My educational background includes a Bachelor of Science degree in Electrical Engineering (BSEE) from Virginia Tech and a Master of Geospatial Information Science and Technology (MGIST) degree from NC State University.

Currently, I am a demographic and mapping consultant and CEO/Principal Consultant of CensusChannel LLC. As a consultant working on redistricting issues over the last twenty-eight years, I have developed nearly one thousand redistricting plans during the last three redistricting cycles. I have drawn plans for jurisdictions of all sizes, from statewide plans to redistricting plans for small municipalities. In the course of my career, I have also had the opportunity to draw and analyze many plans for jurisdictions within the state of North Carolina. During that timeframe, I have provided consulting services for numerous non-profit and public-sector groups centering on redistricting plan development, analysis, and training.

Throughout this recent redistricting cycle (2010 and forward), I have provided services and/or training for several notable organizations including: The Advancement Project, Campaign Legal Center, Congressional Black Caucus Institute, Louisiana Legislative Black Caucus (LLBC), National NAACP, the Southern Coalition for Social Justice (SCSJ), and Southern Echo.

In 1993, I was hired as part of a team of special masters to draw a remedial map for the Dade County Commission that would comply with federal law. That case, *Meek v. Metropolitan Dade County*, invalidated an at-large county voting system. The Court ruled that the at-large system diluted the voting strength of Black and Latino voters in violation of Section 2 of the VRA. As the special master whose primary task was to be the map drawer for this effort, I played a central role in constructing all plan alternatives as well as the final plan which had 13 districts.

In addition, I have testified in federal and state court and provided testimony at several depositions as a redistricting expert with a focus on demographic and mapping analysis. Recently, I testified twice in the latest federal Texas redistricting case *Perez v. Abbott*. My testimony in that case included analysis of several congressional and house district plans for the

[1] U.S. Census Bureau decennial data (PL94-1717 data) were used to review past demographics while American Community Survey (ACS) data were used to determine the recent demographics. In addition, throughout this report Hispanic will be used to refer to Latino populations and Black for African American populations.

State of Texas focusing on several districting principles, including population deviation, compactness, political subdivision splits, and communities of interest.

I also testified in the precursor Texas case of *Perez v. Perry*, which included reviewing and analyzing Texas congressional and house district plans using traditional redistricting principles with a focus on compactness. The analysis in *Perry* also included providing demographic projections for congressional and legislative house districts. In several North Carolina statewide redistricting cases, I analyzed the compactness and demographics of congressional and state legislative districts, specifically in *Covington v. North Carolina* and *NC NAACP v. State of North Carolina*. Additionally, in *ADC v. Alabama,* I generated maps that analyzed split precincts and developed Alabama statewide senate and house redistricting plans, which were submitted to the Court as remedial plans.

In the course of this current redistricting cycle, I was one of two Project Managers for a week-long redistricting expert preparation session. The training session was sponsored by Duke University's Center for the Study of Race, Ethnicity and Gender in the Social Sciences (RGESS) and the SCSJ. In that capacity I developed and managed a section focused on preparing 18 political cartographers, with Geographic Information System (GIS) backgrounds, with the goal of them becoming redistricting demographic and mapping related experts.

I also served as a Consulting Demographer and Project Director for the Congressional Black Caucus Institute's Redistricting Project. In that role, I provided redistricting plan development, review, and analysis and answered various questions from members of congress and staff pertaining to the redistricting process.

My redistricting/GIS experience and work as an expert are contained within my attached resume (see Appendix A).

I am being compensated at a rate of $180 per hour.

III. Software, Data, and Technical Process Utilized

My opinions, which are based on the technical and specialized knowledge that I have gained from my education, training, and experience, rely on commonly used, widely accepted, and reliable methods of analysis, including my review and analysis of the following:

The software utilized for the development of the Illustrative Plans was Maptitude for Redistricting (Maptitude) by Caliper Corp. Maptitude for Redistricting is one of the leading redistricting software applications utilized by consultants, major nonprofit groups, and governmental entities. The software includes Census 2010 data (PL-94-171) for the state of Virginia that was utilized during the map drawing process.

Several datasets were utilized and obtained from various government websites:

a. Data for Virginia Beach were downloaded from the Census Bureau's website, including the city level PL-94-171 data for 1990, 2000, and 2010; the 2008-2012 5-Year and 2013-2017 5-Year American Community Survey (ACS) data; and the

2017 1-Year ACS data. Additional datasets were downloaded at the census tract level for 1990 and 2013-2017 5-Year ACS data. For most of these data, the U.S. Census Bureau's American FactFinder website was used to generate reports in hardcopy format for verification purposes. These reports are found in Appendix B.[2] Some of the 1990 total population, 2000 Citizen Voting Age Population (CVAP), 2008-2012 5-Year ACS CVAP, and 2013-2017 5-Year ACS CVAP data for Virginia Beach's major race/ethnicity categories were generated by importing the datasets into Microsoft Excel for hardcopy production.

b. To evaluate district configurations, I downloaded the most recent race/ethnicity citizenship data, which is the 2013-2017 5-Year (ACS) dataset at the block group level for the City of Virginia Beach.[3]

c. In order to review the 2013-2017 5-Year ACS data at various geographic levels for the Illustrative Plan, I utilized Maptitude for Redistricting's disaggregation/aggregation process. The disaggregation/aggregation process is an industry acceptable process when evaluating citizenship data or other data that is not provided at the census block or other levels.[4] Once the disaggregation/aggregation process was completed, estimated CVAP data was available for review at the district level (as well as other Census levels).

d. I also downloaded city subdivision shapefiles from the city's GIS website in order to obtain Virginia Beach's current seven (7) district residency plan.[5] These files provided the residency boundaries for comparison with the Illustrative Plan and an approximation of the neighborhood subdivision locations for the city during development of the Illustrative Plan.

IV. Summary of Opinions

A summary of my conclusions and opinions includes the following:

e. The City of Virginia Beach has seen significant growth in the Hispanic, Black and Asian populations during the past 27 years. The combined HBA population grew from 20.80% in 1990 to a third of the city's total population (33%) in 2017. During the same time period, the City's White population has decreased;

[2] See https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml. It is important to note that the Census Bureau states that there may be slight difference between select data in American FactFinder and their downloadable datasets.
[3] See https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.2018.html
[4] Disaggregation apportions a population to a lower geographic area from a higher geographic area using a percentage of a matching population field at both geographic levels. In this instance, voting age population was used as the weighted variable to apportion amounts to census blocks. Aggregation sums up the lower level results to all other higher geographic levels that are to be used. Maptitude also includes a pure geographic disaggregation/aggregation process that was not utilized during this analysis.
[5] See https://gis.data.vbgov.com

f. Analysis of census tract data reveal that most Hispanic, Black and Asian persons reside in the same communities. Thirty-one out of the 100 census tracts in Virginia Beach contain 54.4% of the HBA population;

g. In most cases, Virginia Beach's White population outpaces the HBA population on several socioeconomic indicators according to ACS data. Hispanic, Black and Asian persons had significantly higher percentages of persons with no high school education and lower median household incomes than White persons and households. Furthermore, Hispanic and Black persons had higher below poverty percentages than White persons;

h. Finally, the HBA citizen voting age population in the city of Virginia Beach is sufficiently large and geographically compact to enable the creation of two single-member majority Hispanic, Black and Asian combined districts.

V. Methodology

First, I analyzed the recent and past demographic and socioeconomic profiles of the City of Virginia Beach. This analysis specifically included a review of the city's HBA combined populations over the 1990, 2000, and 2010 decennial censuses. The HBA population was analyzed by reviewing total population, voting age population (VAP), and Citizen Voting Age Population (CVAP) for the city.

I also reviewed socioeconomic data in order to observe various racial/ethnicity disparities and commonalities within the city at large as well as within the HBA communities.[6] This included data on education, income, poverty, and housing values. This review allowed me to understand the common socioeconomic indicators pertaining to majority HBA communities in Virginia Beach.

Next, I used Maptitude for Redistricting to review locations of majority HBA communities (in the form of census tracts) throughout the city. This step was necessary in order to determine potential core locations for any majority HBA districts.

Maptitude for Redistricting was also utilized to draw the Illustrative Plan. I used Voting Tabulation Districts (VTDs) as the dominant building block for the plan[7] and used single race alone CVAP instead of VAP in determining whether majority HBA districts could be developed. Utilizing single race alone CVAP provides for a more conservative estimate of the percentages for the majority HBA districts.[8] I also separately included CVAP data for Blacks and Whites of mixed race. Adding CVAP data for Blacks and Whites of mixed race allows for a less conservative estimate of the HBA population.

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[6] Obtained from analyzing census tracts.

[7] For the most part, VTDs followed precinct boundaries with the exception of a handful of places. In some of these locations the precinct appears to split census blocks. Precincts were downloaded from the Virginia Beach GIS website (gis.data.vbgov.com) but were not utilized due to the split census blocks.

[8] In most instances, Hispanic and Asian CVAP percentages yield lower percentages than their associated VAP percentages.

I also reviewed the Virginia Code section that outlines redistricting development for local elections. The relevant code is found in Title 24.2 Chapter 3 (VA Code § 24.2-304.1 [2018]): *If the members are elected from districts or wards and other than entirely at large from the locality, the districts or wards shall be composed of contiguous and compact territory and shall be so constituted as to give, as nearly as is practicable, representation in proportion to the population of the district or ward.*

Although the Code only mentions three (3) of the traditional redistricting criteria (contiguity, compactness and equal population), I followed five (5) of the most commonly used traditional redistricting criteria during the map drawing process:

1. **Equal Population** - Equally populating election districts within a specific population deviation is required to adhere to the "one person one vote" mandate of the Fourteenth Amendment's Equal Protection Clause.[9] The courts have ruled that district population for local jurisdictions should not deviate overall more than 10% from the ideal population size.[10] Consideration of equal population is also required by VA Code § 24.2-304.1.

2. **Contiguity** – Contiguity ensures that there are no parts of a district separated from the district itself. Contiguity can be measured using Maptitude for Redistricting. Consideration of contiguity is also required by VA Code § 24.2-304.1.

3. **Compactness** - Compactness refers to how irregularly shaped or dispersed a district is compared to an ideal compact area (usually a circle). The *Gingles* preconditions require that majority minority districts are "geographically compact.[11]" Consideration of compactness is also required by VA Code § 24.2-304.1. Geographic compactness can be demonstrated by analyzing the majority minority districts using compactness measures.[12] Many compactness measures, such as the ones used in this report, are developed such that the resultant value exists between 0 and 1, whereby the closer the value is to 1, the more compact the district. The districts were analyzed using three of the most widely used compactness measures, Reock, Polsby-Popper, and Minimum Convex Hull.[13]

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[9] A series of Supreme Court cases helped define the equal population criteria, beginning with: *Baker v. Carr,* 369 U.S. 186 (1962); *Gray v Sanders,* 372 U.S. 368 (1963); and *Wesberry v. Sanders*, 376 U.S. 1 (1964).
[10] See *Gaffney v. Cummings,* 412 U.S. 735 (1973).
[11] See *Thornburg v. Gingles,* 478 U.S. 30 (1986). The *Gingles* case requires plaintiffs to show that the minority group "is sufficiently numerous and geographically compact to form a majority in a single-member district."
[12] Compactness measures quantify the geographic shape of the districts as compared to a designated perfectly compact shape, such as a circle.
[13] *Maptitude for Redistricting* documentation defines the compactness measures: 1) Reock - "…the Reock test computes the ratio of the area of the district to the area of the minimum enclosing circle for the district." 2) Polsby-Popper - "The Polsby-Popper test computes the ratio of the district area to the area of a circle with the same perimeter: 4pArea/(Perimeter2)." 3) Convex Hull - "…computes only a ratio of the area of the district to the area of the convex hull of the district, without regard to population within the areas." Convex Hull is routinely referred to as a "rubber-band" enclosure or polygon.

4. **Minimizing Political Subdivision Splits** - As a traditional redistricting principle or criteria, minimizing the splitting of political subdivisions[14] keeps intact political entities such as cities, counties, precincts and voting tabulation districts (VTDs). This report only focused on VTDs as the primary political subdivision.[15] VTDs are generated by the U.S. Census Bureau to mimic election precincts.[16]

5. **Preservation of Communities of Interest** - Preservation of communities of interest is the goal of maintaining a specific population group within a defined geographic area where the group shares one or more common interests (e.g., economic, social, cultural, or ethnic interests). Minimizing splits tends to ensure that these voters can collectively vote for the same representatives in addition to potentially reducing costs in administering elections. Since neighborhoods are considered communities of interest areas, subdivision boundaries were layered underneath district boundaries during the Illustrative Plan development process. This helped ensure that subdivisions were wholly contained within the districts. In addition, specific socioeconomic characteristics of majority HBA census tracts were analyzed for potential communities of interest.

Finally, after drawing a full Illustrative Plan, I generated a final report from Maptitude summarizing the Plan's performance on a set of traditional redistricting criteria and relevant conclusions. These reports and conclusions are discussed below.

VI. Demographic Profile - City of Virginia Beach, VA

A. Virginia Beach, VA - City Level Total Population

According to the decennial censuses of 1990 and 2010, Virginia Beach's total population grew from 393,069 to 437,994 persons—an increase of 11.42%—between 1990 and 2010. (see Table 1).

From 1990 to 2010, the Hispanic, Black, and Asian populations[17] also increased significantly. During that span, the Hispanic population grew from 12,137 to 28,987 persons, the Black population grew from 53,720 to 83,210, and the Asian population grew from 15,920 to 26,312. However, the White population decreased from 309,712 persons in 1990 to 282,470 persons in 2010 (see Table 1).

[14] See *Reynolds v. Sims,* 377 US 533(1964).
[15] Splits for Congressional, State House and Senate Districts are usually not analyzed for local council districts. In addition, it was observed that the current city council residency districts splits Senate and House districts.
[16] Voting Tabulation Districts in Virginia Beach, VA follow election precincts lines in most cases. However, not all VTDs follow precinct boundaries exactly. In some areas, precincts split census blocks and VTDs. VTDs were also used because § 24.2-307 of the VA Code allows cities to increase or decrease the number of precincts, and precincts are not required to have an equal number of registered voters, let alone an equal population. In addition, §24.2 309.2 also provides that precincts can be changed as the result of a court order.
[17] The Black and Asian populations noted in this report represent the Not Hispanic Alone categories for race except where noted.

The recent 2017 1-Year ACS data shows the population for the city of Virginia Beach at 450,435 persons. Between 2010 and 2017, the White population continued decreasing to 277,338, while the Hispanic population grew to 36,723, the Black population stayed fairly constant at 82,181, and the Asian population grew to 29,735. Using the 2017 1-Year ACS data, the combined current HBA population comprises 33.0% of the total population with 148,639 persons. Thus, the HBA percentage increased 12.20% from 1990 while the White population decreased 17.22% (see Table 1).

Table 1 – Total Population by Major Race/Ethnicity (1990-2017) for Virginia Beach, VA

	1990	2000	2010	5Yr ACS 13-17 MP2015^	2017**
TTLPop	393069	425257	437994	450055	450435
Hispanic	12137	17770	28987	35255	36723
White	309712	295402	282470	281675	277338
Black	53720	79092	83210	83290	82181
Asian	15920	20618	26312	29330	29735
HBA*	81777	117480	138509	147875	148639
	1990%	**2000%**	**2010%**	**5Yr ACS 13-17 MP2015%^**	**2017%****
Hispanic%	3.09%	4.18%	6.62%	7.83%	8.15%
White%	78.79%	69.46%	64.49%	62.59%	61.57%
Black%	13.67%	18.60%	19.00%	18.51%	18.24%
Asian%	4.05%	4.85%	6.01%	6.52%	6.60%
HBA*%	20.80%	27.63%	31.62%	32.86%	33.00%

Note: Race categories are Alone (Single Race) Not Hispanic categories
* - HBA = Hispanic or Latino, Black and Asian combined
** - 2017 1-Year ACS Data
^ - 5Yr ACS1317 MP2015 – 5Yr 2013-2017 ACS with a midpoint of 2015

Source: U.S. Census Bureau PL94-171 data for 1990, 2000, 2010; American Community Survey 2013-2017 5-Year and 2017 1-Year data.

B. Virginia Beach, VA - City Level Voting Age Population (VAP)

According to the decennial census of 1990 and 2010 (see Appendix B),[18] Virginia Beach's total Voting Age Population (VAP) grew 283,182 to 332,745 persons—an increase of 17.5%—between 1990 and 2010.

As with the total population, the Hispanic, Black, and Asian VAP[19] increased significantly between 1990 and 2010. During that period, the Hispanic VAP grew from 7,933 to 18,765 persons, the Black VAP grew from 35,811 to 60,212 persons, and the Asian VAP grew from

[18] Demographic reports were printed from American Factfinder except for the 1990 PL94-171 dataset. 1990 PL94-171 data file was downloaded and opened in Microsoft Excel to view demographic attribute values.
[19] The Black and Asian voting age population in this report represents the not-Hispanic Alone categories for race unless identified in the source.

10,675 to 20,978 persons. However, the White VAP decreased from 227,727 persons in 1990 to 224,188 persons in 2010 (see Table 2).

Reviewing the 2017 1-Year ACS data shows the total VAP for the City of Virginia Beach at 341,027 persons. Between 2010 and 2017, the White VAP decreased to 223,852.[20] However, the Hispanic VAP grew to 25,630 persons, the Black VAP grew to 65,558 persons, and the Asian VAP grew to 25,815 persons. Using the 2017 1-Year ACS data, the current combined HBAVAP comprises 34.31% of the total VAP, or 117,003 persons. Thus, the HBAVAP percentage increased 15.09% from 1990 to 2017, while the White VAP decreased 14.78% (see Figure 1).

Table 2 –VAP by Major Race/Ethnicity (1990 - 2017) for Virginia Beach, VA

	1990	2000	2010	MP2015 5Yr ACS 13-17^	2017**
VAP	283182	308369	332745	334565	341027
HispVAP	7933	11274	18765	19215	25630
WhiteVAP	227727	222538	224188	225285	223852
BlackVAP	35811	52283	60212	60145	65558
AsianVAP	10675	15828	20978	21810	25815
HBAVAP	54419	79385	99955	661020	117003
	1990%	**2000%**	**2010%**	**MP2015 5Yr ACS 13-17%^**	**2017%**
HispVAP%	2.80%	3.66%	5.64%	5.74%	7.52%
WhiteVAP%	80.42%	72.17%	67.38%	67.34%	65.64%
BlackVAP%	12.65%	16.95%	18.10%	17.98%	19.22%
AsianVAP%	3.77%	5.13%	6.30%	6.52%	7.57%
HBAVAP%	19.22%	25.74%	30.04%	30.24%	34.31%

Note: Race categories are Alone (Single Race) Not Hispanic categories; HBAVAP = Hispanic or Latino VAP, Black VAP and Asian VAP combined

** - 2017 1 Year ACS data which includes Hispanic or Latino persons for the race categories of Black and Asian from American FactFinder. Male and Female totals were summed together to produce the total VAP for each race/ethnicity.

^ - 5Yr ACS1317 – 5Yr 2013-2017 ACS with a midpoint of 2015

Source: U.S. Census Bureau PL94-171 data for 1990, 2000, 2010; American Community Survey 2013-2017 5-Year and 2017 1-Year data.

[20] The data from the 2010 census to 2013-2017 5-Year ACS indicate a slight downward trend for the Black VAP. However, reviewing the 2017 1-Year ACS, this minor trend reverses and returns back to it's the previous two-decade trend of the Black VAP increasing.

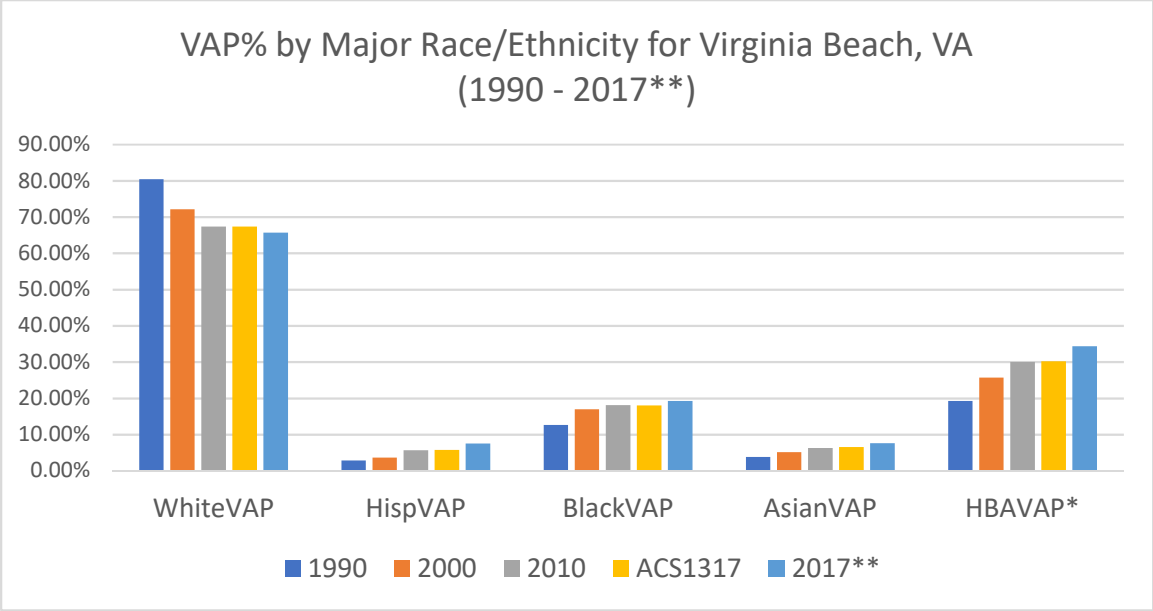

Figure 1 – VAP% by Major Race/Ethnicity for Virginia Beach, VA

* - HBAVAP = Hispanic or Latino VAP, Black VAP and Asian VAP combined
** - 2017 1 Year ACS data which includes Hispanic or Latino persons for the race categories of Black and Asian from American FactFinder

Source: U.S. Census Bureau PL94-171 data for 1990, 2000, 2010 Hispanic and Not Hispanic Alone categories; American Community Survey 2017 1-Year data.

The graph depicted in Figure 1 shows the demographic trend for Virginia Beach's White, Hispanic, Black, and Asian VAP, as well as HBAVAP combined. Figure 1 clearly shows a pattern of decreasing White VAP along with a pattern of increasing HBAVAP.

C. Virginia Beach - City Level Citizen Voting Age Population (CVAP)

The Citizen Voting Age Population (CVAP) for the city of Virginia Beach, VA has increased by 9.16% from the 2000[21] to 2017, according to the 2000 decennial census long form and the 1-Year 2017 ACS survey (see Appendix B).[22]

From 2000 to 2017, the Hispanic, Black, and Asian CVAP[23] (HBACVAP) increased significantly: The Hispanic CVAP increased from 8,605 to 21,066 persons, the Black CVAP from 51,055 to 65,071 persons, and the Asian CVAP from 11,785 to 20,180 persons. However, the White CVAP increased only slightly from 218,685 persons in 2000 to 218,891 persons in 2017 (see Table 3).

[21] The 1990 citizen voting age population was not readily available.
[22] Demographic reports were printed from American FacFfinder except for the 1990 PL94-171 dataset. 1990 PL94-171 data file was downloaded and opened in Microsoft Excel to view demographic attribute values.
[23] The Black and Asian Voting Age Population in this report represents the not-Hispanic Alone (Single Race) categories for race except for data 2017 1-Yr ACS from American FactFinder. These data include Hispanic Black and Hispanic Asian in their respective values.

Table 3 –CVAP by Major Race/Ethnicity (2000 - 2017) for Virginia Beach, VA				
	2000^	**2010MP** 2008-2012 ACS**	**2015MP** 2013-2017 ACS**	**2017*** **
CVAP	298470	320785	334515	334824
HispCVAP	8605	16185	20265	21066
WhiteCVAP	218685	220845	222635	218891
BlackCVAP	51055	58805	62150	65071
AsianCVAP	11785	17100	18805	20180
HBACVAP	71445	92090	101220	106317
	2000%^	**2010MP** 2008-2012 ACS%**	**2015MP** 2013-2017 ACS%**	**2017%*** **
HispCVAP%	2.88%	5.05%	6.06%	6.29%
WhiteCVAP%	73.27%	68.85%	66.55%	65.37%
BlackCVAP%	17.11%	18.33%	18.58%	19.43%
AsianCVAP%	3.95%	5.33%	5.62%	6.03%
HBACVAP%	23.94%	28.71%	30.26%	31.75%

Note: Race categories are Alone (Single Race) Not Hispanic categories (excluding 2017)

^ - Using 2000 Decennial Survey Long Form Special Tabulation
* - HBACVAP = Hispanic or Latino CVAP, Black CVAP and Asian CVAP combined
** - 2010MP and 2015MP are the midpoints for 2008-2012 ACS 2013-2017 ACS surveys. Although, the Census Bureau dissuades the use of the midpoint to denote a specific ACS, the midpoint continues to be a halfway point for the 5 Year ACS survey average. The use of midpoints as well as the mixed-year surveys included in this table occurs to present the likely trends of the CVAP race/ethnicity categories.
*** - 2017 1 Year ACS data which includes Hispanic or Latino persons for the race categories of Black and Asian

Source: U.S. Census Bureau data for 2000 (Special Tabulation) decennial census long form, 2008-2012 5Yr ACS, 2013-2017 5Yr ACS; American Community Survey 2017 1-Year data.

Reviewing the 2017 1-Year ACS data shows that the CVAP for the city of Virginia Beach was 334,824 persons. Using the 2017 1-Year ACS data, the combined HBACVAP rose to 31.75% of the total CVAP in the City of Virginia Beach with 106,317 persons (see Table 3-3 notes). Thus, the HBA CVAP increased 7.81% from 2000 to 2017 while the White CVAP as a share of total CVAP decreased 6.09% (see Figure 2).

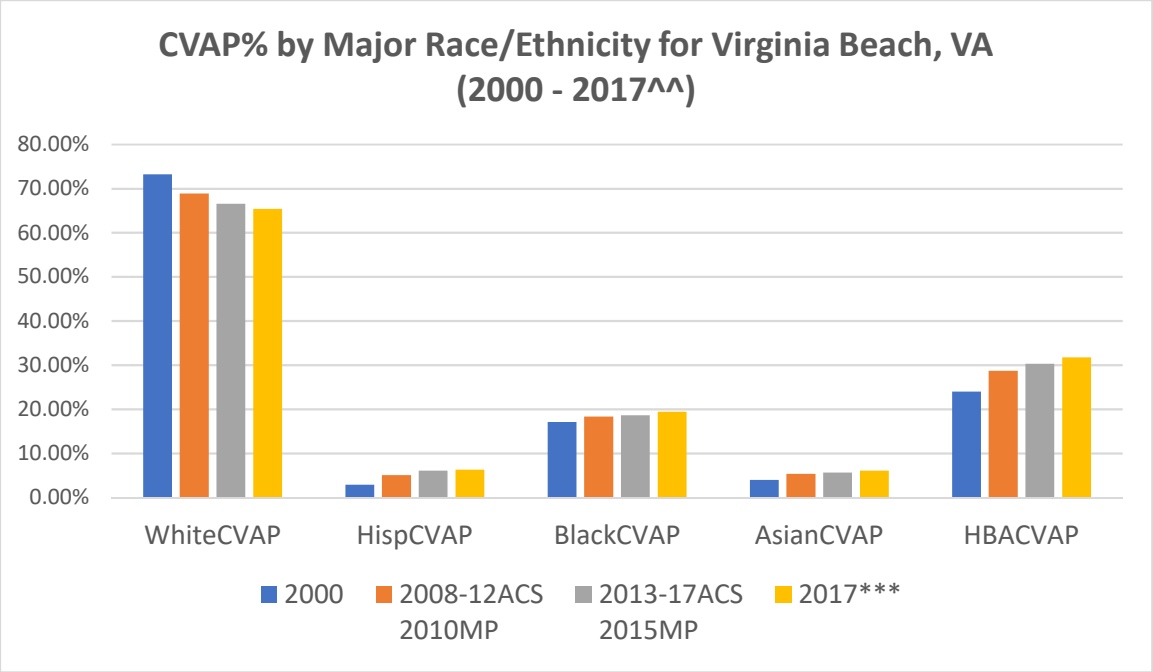

Figure 2 – CVAP% by Major Race/Ethnicity for Virginia Beach, VA

Note: Race categories are Alone (Single Race) Not Hispanic categories (excluding 2017)

^ - 2000 Decennial Sample Survey CVAP Special Tabulation
^^ - Includes 2000 Summary File CVAP Special Tabulation (2000), and 5-Year ACS (2008-2012 ACS, 2013-2017 ACS, and 1 Year 2017 ACS)
* - HBACVAP = Hispanic or Latino CVAP, Black CVAP and Asian CVAP combined
** - 2010MP is the midpoint for 2008-2012 ACS survey and 2015MP the midpoint for 2013-2017 ACS survey. Although, the Census Bureau dissuades the use of the midpoint to denote a specific ACS, the midpoint continues to be a halfway point for the 5 Year ACS survey average. The use of midpoints in this table occurs to show the trends of the CVAP race/ethnicity categories.
*** - 2017 1 Year ACS data which includes Hispanic or Latino persons for the race categories of Black and Asian

Source: U.S. Census Bureau data for 2000 (Special Tabulation) decennial census long form, 2008-2012 5Yr ACS, 2013-2017 5Yr ACS; American Community Survey 2017 1-Year data.

D. Virginia Beach – City-Level Major Socioeconomic Attributes

According to the 2017 1-Year ACS data, Virginia Beach's White population performed better on a series of socioeconomic indicators, displayed below in Table 4. The median household income in 2017 for the city of Virginia Beach was $72,586, 8.0% of the population was below the poverty level, 6.5% of the city had no high school education (for those 25 years and above).

Table 4 – Virginia Beach, VA Select Socioeconomic Attributes					
	Citywide	**White**	**Hispanic**	**Black**	**Asian**
Med HH Income	$72,586.	$80,995	$57,042	$52,681	$74,869
Below Poverty%	8.0%	5.9%	15.5%	14.4%	3.9%
No HS Education%	6.5%	4.9%	15.3%	8.7%	9.6%

Note: Gray areas represent race values that were not available. Black and Asian includes Hispanic population
Source: U.S. Census Bureau 2017 1-Year ACS data

However, the median household income from the 2017 1-Year ACS for Hispanic, Black, and Asian households were lower than White households, and in most cases also lower than the citywide value. The White median household income was $80, 995, while the median household income for Hispanic, Black, and Asian households was $57,042, $52,681, and $74,869, respectively.[24] Additionally, the Hispanic and Black populations had higher percentages of persons Below Poverty than the White population. Estimates show that 5.9% of the White population was below the poverty level, as compared to 15.5% of Hispanics, 14.4% of Blacks, and 3.9% of Asians. The Hispanic, Black and Asian population also had a significantly higher percentage of persons with No High School Education than White population. In 2017, 4.9% of White persons in Virginia Beach lacked a high school education, as compared to 15.3% of Hispanics, 8.7% of Blacks, and 9.6% of Asians.

E. Virginia Beach – Distribution of Majority HBA Communities (Census Tracts)

In 1990, there was only one majority HBA (Total Population) census tract in the city of Virginia Beach.[25] However, according to the 2013 – 2017 5-Year ACS data (2015MP), 10 census tracts now have a combined HBA majority. These 2013-2017 majority HBA communities[26] are located near the western center of Virginia Beach and toward the west and north-west Norfolk & Chesapeake boundary areas of the city (see Figure 3).

In addition, Figures 4, 5, and 6 depict the distribution of Hispanic, Black, and Asian populations throughout the city. Each red dot on the map represents 500 persons residing within the census tract for each respective race/ethnicity. Collectively, the red dots of Hispanic, Black, or Asian population are centered mostly around census tracts that are greater than 40% or 50% HBA. In fact, reviewing data that sums each race/ethnicity in the census tracts that have greater than 40% HBA verifies that most Hispanic, Black, and Asian persons reside in the same communities. Table 5 shows that 31 of Virginia Beach's 100 census tracts contain 54.90% of the HBA combined population. The same census tracts contain 45.50% of the Hispanic population, 59.02% of the Black population, and 52.20% of the Asian population.

[24] 2017 American FactFinder list the Alone categories for Black and Asian that includes Hispanic persons, while the listing contains Non-Hispanic for White households.
[25] 1990 Decennial Census Survey census tract level
[26] A census tract usually contains one or more neighborhoods within its boundary.

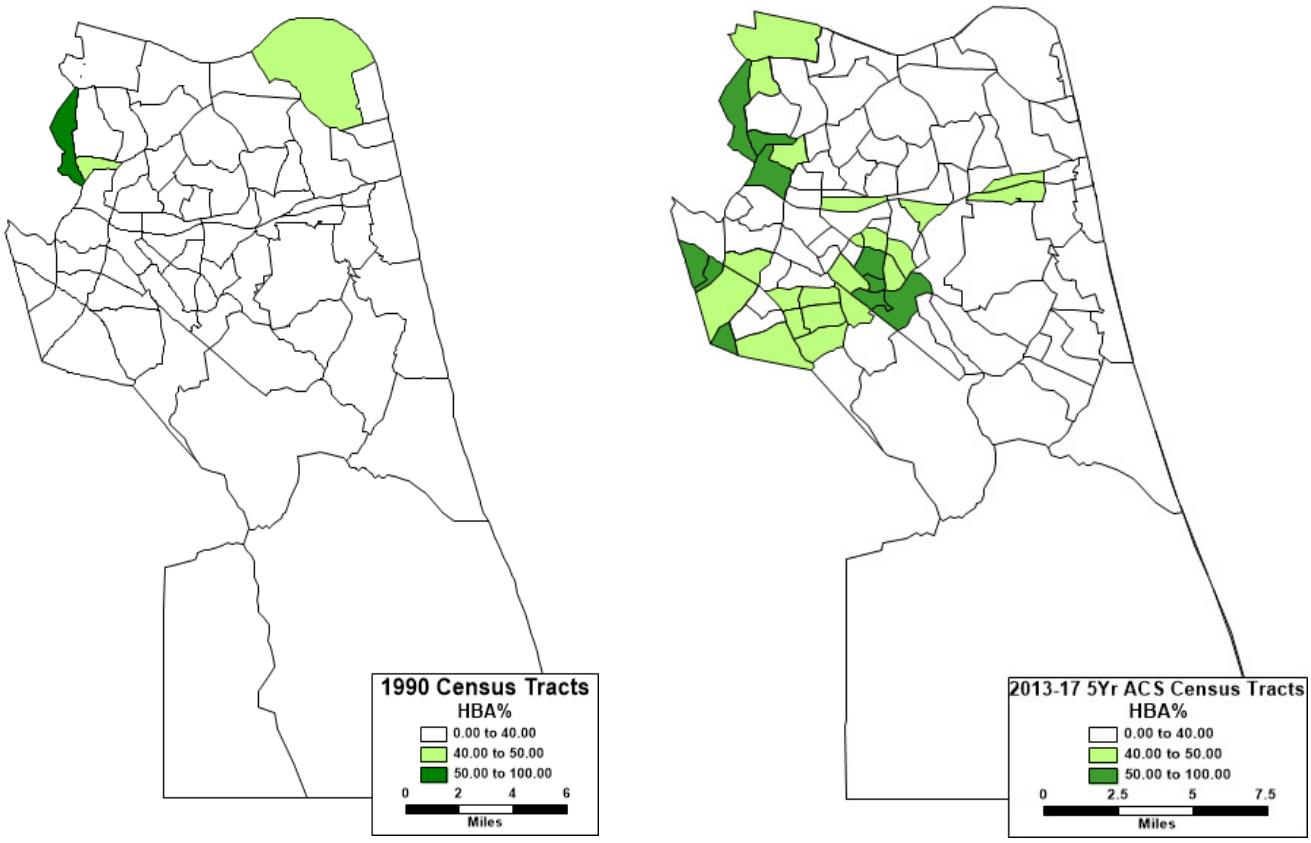

Figure 3 – Virginia Beach, VA Maj. HBA (Total Race) Census Tracts
(1990 Decennial Census & 2013-2017 5Yr ACS)

Note: Race categories are Alone (Single Race) Not Hispanic categories
Source: U.S. Census Bureau PL94-171 data for 1990; 2013 - 2017 5-Year ACS data

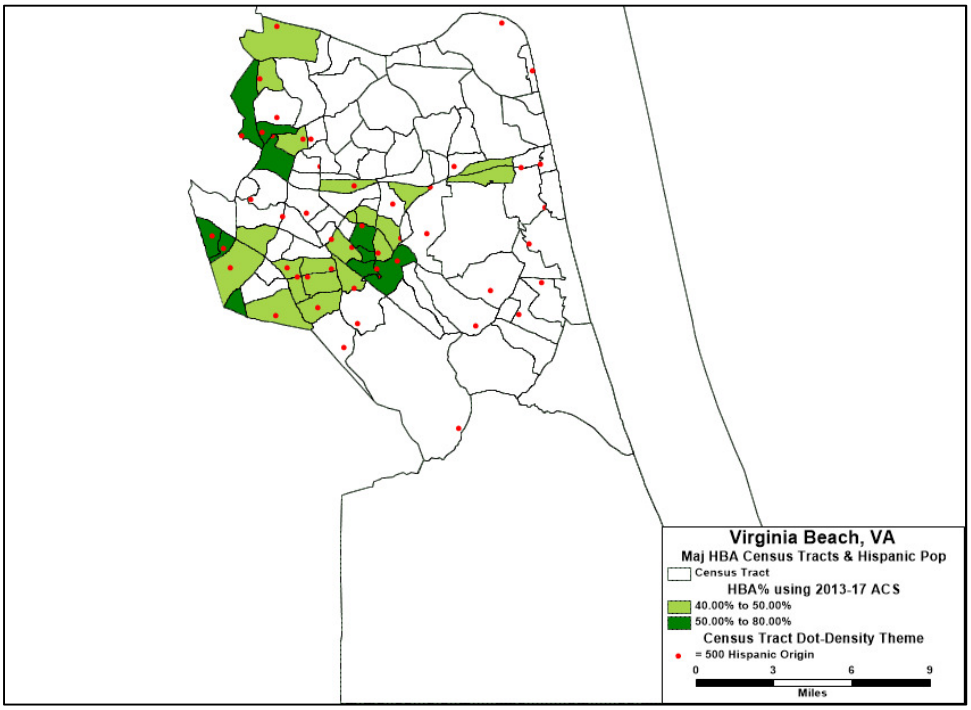

Figure 4 – Virginia Beach, VA Maj. HBA (Total Race) Census Tracts (with Hispanic Dot Density Points using 2013-2017 5Yr ACS)

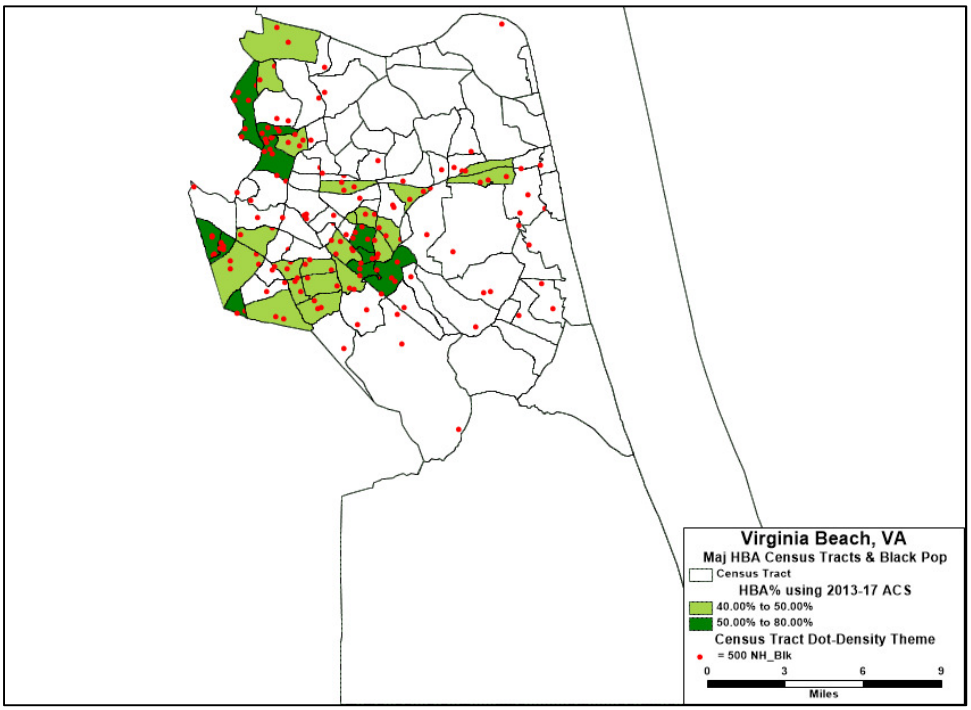

Figure 5 – Virginia Beach, VA Maj. HBA (Total Race) Census Tracts (with Black Dot Density Points using 2013-2017 5Yr ACS)

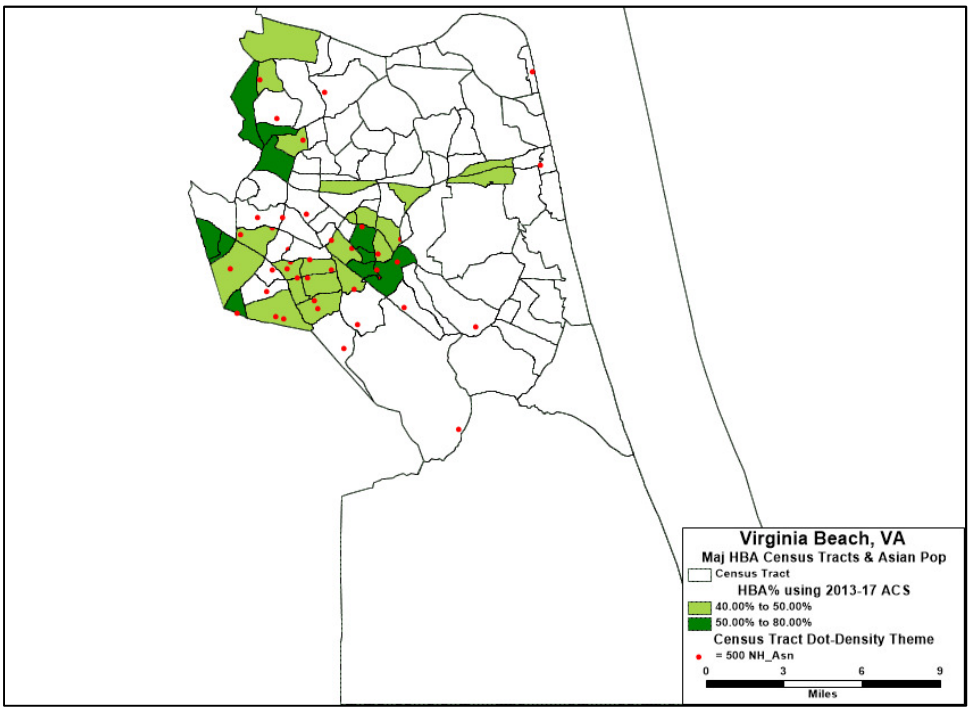

Figure 6 – Virginia Beach, VA Maj. HBA (Total Race) Census Tracts (with Asian Dot Density Points using 2013-2017 5Yr ACS)

Table 5 – VAB Population of HBA Residing in >40% and >50% HBA Census Tracts

HBA% CT	# CTs	Hispanic	Black	Asian	HBATTL
>40%	31	13188	49113	13735	76036
>50%	10	4629	22381	4102	31112
City Total	100	28987	83210	26312	138509
HBA% CT	**# CTs**	**Hispanic%**	**Black%**	**Asian%**	**HBATTL%**
>40%	31	45.50%	59.02%	52.20%	54.90%
>50%	10	15.97%	26.90%	15.59%	22.46%
City Total	100	100.00%	100.00%	100.00%	100.00%

Note: HBATTL – Total Hispanic, Black, and Asian combined persons (Not Hispanic Black and Asian categories); and CT - Census Tract

Source: U.S. Census Bureau 2013-2017 5-Year ACS data using Maptitude for Redistricting Dataview Statistical Summary option

VII. Results - Illustrative Plan for the City of Virginia Beach

A. Illustrative Plan Introduction

According to 2010 Census data, the City of Virginia Beach consisted of a voting age population that was 30.04% HBA (see Table 2). In addition, the 2013-2017 5-Year ACS and 2017 1-Year ACS data yielded even higher HBACVAP percentages of 30.26% and 31.75% respectively (see Table 3). Finally, Figures 3 through 6 show the concentration of the city's HBA population. Thus, the city's HBA population, which is now over 30% of the city's CVAP, along with the HBA's geographic concentration, is sufficiently large enough and geographically compact to draw a plan that meets the first *Gingles* precondition.[27]

The Illustrative Plan includes two separate majority HBACVAP districts, see Figure 7. The resulting demographic data for the Illustrative Plan demonstrates that the first *Gingles* precondition has been met. That is to say that Virginia Beach is capable of containing two districts with a majority HBACVAP. The Illustrative Plan also adheres to the Virginia Code sections relating to election districts[28] as well as traditional redistricting criteria.

B. Illustrative Plan - Equal Population (Population Deviation)

The Illustrative Plan was developed using a single-member, 10-district councilmanic scheme. Using 2010 Census data, the plan's ideal population size is 43,799 for each district.[29] The Illustrative Plan has a resulting population deviation from the ideal of 157 (.36%) for District 2 and -2,090 (-4.77%) for District 1. The Illustrative Plan has an overall deviation of 3,264 persons or 7.45% with the lowest population deviation at -2,090 (-4.77%) and the highest at 1174 (2.68%). See Appendix D for the complete table of population deviation and demographics for the Illustrative Plan.

C. Illustrative Plan - Race/Ethnicity Demographics

According to 2010 Census data, District 1 of the Plan, has a Hispanic population of 4,125 (9.38%), a Black population of 13,540 (30.80%), and an Asian population of 5,378 (12.24%). The combined HBA total population is 23,043 (52.42%). The White population for the district is 18,743 (42.64%). See Table 6.

The Illustrative Plan's District 2 has a Hispanic population of 2,958 (7.09%), a Black population of 17,211 (41.26%), and an Asian population of 1,736 (4.16%). The combined HBA total population is 21,905 (52.52%). The White population for the district is 18,166 (43.55%). See Table 6.

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[27] See *Thornburg v. Gingles,* 478 U.S. 30, 56 (1986). The first precondition of Gingles requires demonstration that the minority population is sufficiently numerous and geographically compact to enable the creation of at least one single-member majority-minority district.

[28] § 24.2-304.1. At-large and district elections; reapportionment and redistricting of districts or wards; limits

[29] The ideal population size is calculated by dividing the jurisdiction's total population (437,994 using 2010 Census data) by the number of districts.

Table 6 – Illustrative Plan - Major Race/Ethnicity using 2010 Census							
District	**TTLPop**	**Dev**	**Hispanic**	**White**	**Black**	**Asian**	**HBATTL***
1	43956	157	4125	18743	13540	5378	23043
2	41709	-2090	2958	18166	17211	1736	21905
District	**TTLPop**	**Dev%**	**Hispanic%**	**White%**	**Black%**	**Asian%**	**HBATTL%***
1	43956	0.36%	9.38%	42.64%	30.80%	12.24%	52.42%
2	41709	-4.77%	7.09%	43.55%	41.26%	4.16%	52.52%

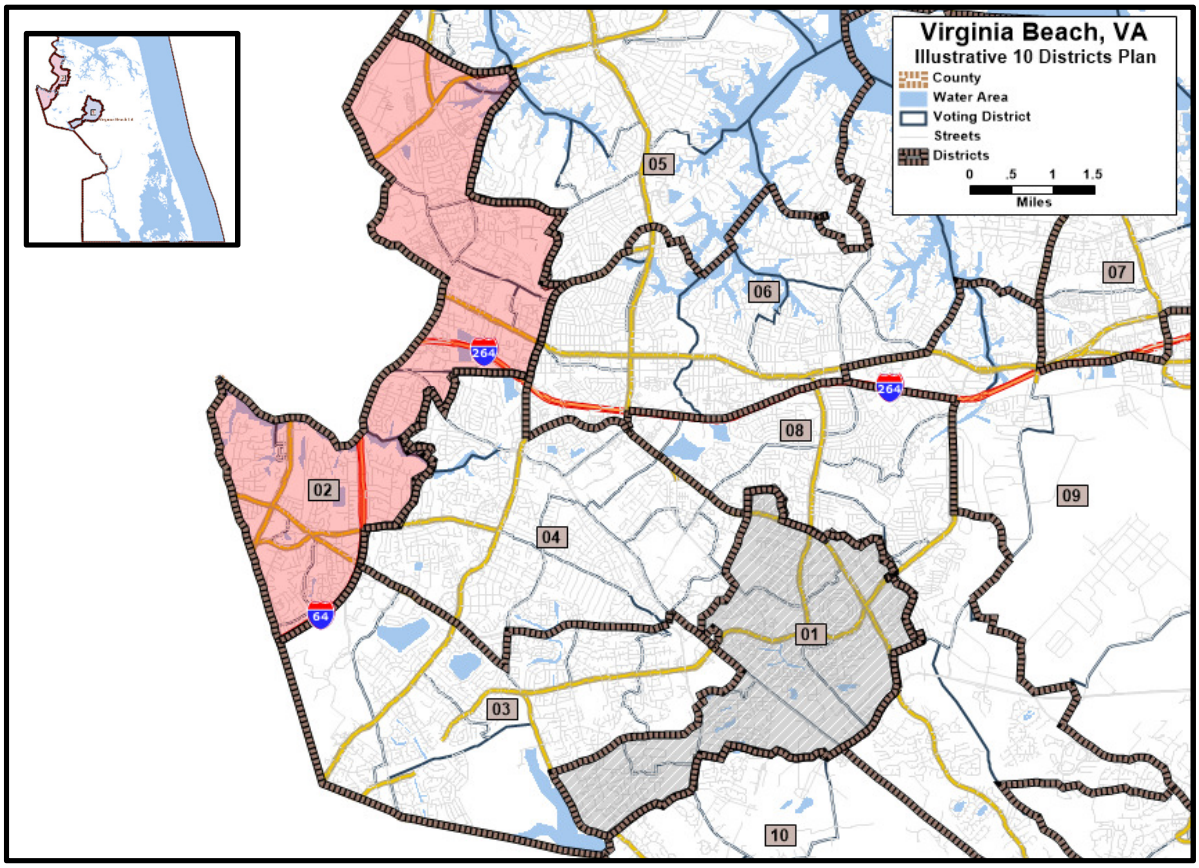
* - HBATTL – Total Hispanic, Black, and Asian combined persons (Not Hispanic Black and Asian categories)
Source: U.S. Census Bureau 2010 data, Maptitude for Redistricting Illustrative Plan

According to 2013-2017 5-Year ACS data, which has a midpoint of 2015, District 1 has a total Hispanic population of 4,010 (9.49%), a Black population of 12,735 (30.12%), and an Asian population of 5,513 (13.04%). The combined HBA total population is 22,258 (52.65%). The total White population for the district is 17,289 (40.90%). See Appendix D.

According to 2013-2017 5-Year ACS data, District 2 has a total Hispanic population of 4,279 (9.63%), a Black population of 17,425 (39.21%), and an Asian population of 2,457 (5.53%). The combined HBA total population is 24,161 (54.37%). The total White population for the district is 18,616 (41.89%). See Appendix D.

According to 2013-2017 5-Year ACS data, District 1 has a Hispanic CVAP (HCVAP) of 2,176 (7.31%), a Black CVAP (BCVAP) of 9,135 (30.69%), and an Asian CVAP (ACVAP) of 3,566 (11.98%). The combined HBACVAP is 14,888 (50.03%). The White CVAP (WCVAP) for the district is 13,730 (46.13%). See Table 7.

According to 2013-2017 5-Year ACS data, District 2 has a Hispanic CVAP (HCVAP) of 2,235 (6.81%), a Black CVAP (BCVAP) of 12,810 (39.05%), and an Asian CVAP (ACVAP) of 1,367 (4.17%). The combined HBACVAP is 16,415 (50.04%). The White CVAP (WCVAP) for the district is 15,543 (47.38%). See Table 7.



Source: Illustrative Plan for Virginia Beach, VA using Maptitude for Redistricting

Figure 7 – Virginia Beach Illustrative Plan with Two Majority HBA Districts

Table 7 – Illustrative Plan - Major Race/Ethnicity using CVAP (2013-17 ACS)

District	CVAP 13-17ACS	Dev	HCVAP 13-17ACS	WCVAP 13-17ACS	BCVAP 13-17ACS	ACVAP 13-17ACS	HBACVAP 13-17ACS
1	29761	157	2176	13730	9135	3566	14888
2	32804	-2090	2235	15543	12810	1367	16415
District	**% CVAP 13-17ACS**	**% Dev**	**% HCVAP 13-17ACS**	**% WCVAP 13-17ACS**	**% BCVAP 13-17ACS**	**% ACVAP 13-17ACS**	**% HBACVAP 13-17ACS**
1	29761	0.36%	7.31%	46.13%	30.69%	11.98%	50.03%
2	32804	-4.77%	6.81%	47.38%	39.05%	4.17%	50.04%

Note: 13-17ACS - 2013-2017 5-Year ACS

Source: U.S. Census Bureau 2013-2017 5 Year ACS Block Group data, Maptitude for Redistricting Illustrative Plan

In addition to containing a majority of single race alone HBACVAP, the HBACVAP% including persons that identify as *both* Black and White of Districts 1 and 2 yields percentages of 51.11% and 51.08% HBACVAP, respectively (see Appendix D).

D. Illustrative Plan - Contiguity

The Illustrative Plan's districts are contiguous with no separate land masses or areas (see Appendix E).

E. Illustrative Plan - Compactness

Three measures were used to determine compactness: Reock, Polsby-Popper, and Convex Hull. District 1 has the values of 0.36 for Reock, 0.31 for Polsby-Popper, and 0.67 for Convex Hull. District 2 produces the values of 0.24 for Reock, 0.20 for Polsby-Popper, and 0.58 for the Convex Hull (See Table 8). The compactness measures for the overall Illustrative Plan range from .24 to .56 for Reock, .20 to .56 for Polsby-Popper, and .58 to .90 for Convex Hull.

Table 8 – Illustrative Plan Compactness Measurements

District	Reock	Polsby-Popper	Convex Hull
1	0.36	0.31	0.67
2	0.24	0.20	0.58
3	0.43	0.46	0.79
4	0.56	0.41	0.81
5	0.38	0.41	0.85
6	0.29	0.31	0.76
7	0.53	0.56	0.86
8	0.24	0.20	0.58
9	0.41	0.40	0.81
10	0.53	0.53	0.90

Source: Maptitude for Redistricting Compactness report for the Illustrative Plan.

F. Illustrative Plan - Compactness Comparative Analysis

The Illustrative Plan's compactness measures for the two majority-minority districts were compared to the city's current residency district plan.[30] The two plans were compared using three (3) compactness measures (see Appendix F). Virginia Beach's current residency city council districts have compactness measures that range (Min and Max) from 0.29 to 0.54 for Reock, 0.21 to 0.55 for Polsby-Popper, and 0.58 to 0.91 for Convex Hull (See Tables 9 and 10).

District 1 of the Illustrative Plan has compactness scores within or at the range of values reported for the current city council districts. District 2's Convex Hull score falls at the min-max range of the city council districts. The Polsby-Popper score for District 2 is approximately the same as the current city council districts' range (.20 for District 2 versus .21 minimum of the Residency

[30] Although the city's seven (7) district residency plan is not directly comparable to the Illustrative 10 district plan, a comparison was made to provide insight on the Illustrative Plan's compactness measures.

Plan). The Reock score for District 2 falls just outside of the range of the current city council districts (.24 for District 2 versus .29 minimum of the Residency Plan).

Table 9 – Current City Council Residency Plan Compactness Measurements			
District	**Reock**	**Polsby-Popper**	**Convex Hull**
1	0.29	0.26	0.66
2	0.34	0.21	0.58
3	0.30	0.21	0.60
4	0.30	0.31	0.83
5	0.48	0.54	0.85
6	0.47	0.48	0.89
7	0.54	0.55	0.91

Source: Maptitude for Redistricting Compactness report for the VAB City Council Residency Plan.

It is noticeable that the Illustrative Plan's District 2 is a border district on the western side of Virginia Beach that has an indented configuration (see Appendix C). Thus, the district's compactness values are lowered by the shape and contour of Virginia Beach on the western boundary (see Figure 7). The irregular indented shape of the city on the west side appears to lower the indices.[31] This theory is validated by the lower compactness measures for District 2 in the current city council's residency plan, given that District 2 of the council's residency plan is near the same vicinity and includes some of the lowest compactness measures for the plan. See Table 9 for the Polsby-Popper (.21) and Convex Hull (.58) compact measures for the current residency plan.

Table 10 – Illustrative Plan and City Council Residency Districts Compactness Measurements			
District	**Reock**	**Polsby-Popper**	**Convex Hull**
Illustrative Plan Min	0.24	0.20	0.58
Illustrative Plan Max	0.56	0.56	0.90
City Council Min	0.29	0.21	0.58
City Council Max	0.53	0.53	0.89

Source: Maptitude for Redistricting Compactness for Illustrative Plan and VAB City Council Residency Plan

G. Illustrative Plan - Political Subdivision Splits (VTDs)

The Illustrative Plan's political subdivisions splits were analyzed using Voting Tabulation Districts (which are designed to mimic election precincts[32]) The Illustrative Plan did not split

[31] See Ansolabehere & Palmer, A Two-Hundred-Year Statistical History of the Gerrymander, Ohio State Law Journal (2016). Since Reock is computed by comparing the area of the district to the area of the minimum bounding circle that encloses, districts with carved out areas tend to produce lower compactness scores. In addition, the Polsby-Popper score, which measures the ratio of the area of the district to the area of a circle with the same perimeter, penalizes districts with longer than necessary perimeter distances, such as what was produced by the western boundary of Virginia Beach. The indentation also lowers the values of the Convex Hull measure by increasing the area of the denominator of the measure's ratio.

[32] Voting Tabulation Districts (VTDs) in Virginia Beach, VA follow election precincts lines in most cases. However, not all VTDs follow precinct boundaries exactly.

VTDs in an excessive amount in either District 1 or 2: District 1 splits 6 VTDs while District 2 splits 5 VTDs (see Table 11).

Table 11 – Illustrative Plan Split VTDs		
	District 1	**District 2**
# of Split VTDs	6 out of 10	5 out of 13

Source: Maptitude for Redistricting Political Subdivision Splits report for Illustrative Plan.

H. Illustrative Plan – Political Subdivision Splits (VTDs) Comparative Analysis

The Illustrative Plan's political subdivision splits were compared to the current city's residency plan (see Appendix G). When comparing the number of split VTDs between both plans, the Illustrative Plan was found to split significantly fewer VTDs than the current residency district plan (see Table 12). The Illustrative Plan splits 12 VTDs while the Residency Plan splits 28.

Table 12 – Illustrative Plan vs Current Residency Plan Split VTDs	
Illustrative Plan District	**# of Splits**
1	6
2	5
3	1
4	5
5	1
6	2
7	0
8	4
9	0
10	0
Current Residency Plan District	**# of Splits**
1	7
2	13
3	13
4	7
5	5
6	8
7	6

Source: Maptitude for Redistricting Political Subdivision Splits report for Illustrative Plan and Residency Plan

I. Illustrative Plan – Communities of Interest (Neighborhoods)

The Illustrative Plan was developed with the goal of preserving neighborhood subdivisions as communities of interest. In most instances, neighborhoods were not split. In those instances where a split did occur, it was usually due to following the outline of a VTD that split a subdivision or the inclusion or exclusion of an irregularly shaped census block (see Appendix H).

J. Illustrative Plan - Communities of Interest (HBA Common Socioeconomic Characteristics)

According to the 2013-2017 5-Year ACS, there are nine (9) census tracts that are majority HBA contained within Districts 1 or 2 of the Illustrative Plan. Four majority HBA tracts are contained within District 1 (454.06, 458.09, 458.10, 460.13), while District 2 includes five majority HBA census tracts (402, 404.02, 406, 462.20, and 462.21). These core majority HBA census tracts possess similar socioeconomic characteristics and thus are potential communities of interests that differ from the overall citywide characteristics of most census tracks (see Appendix I).

Reviewing the 2013-2017 5-Year ACS, all of the majority HBA census tracts in District 1 have median household incomes that range from $41,146 to $68,257, which is lower than the city's White median household income of $76,547 and lower than the citywide median household income of $70,500. Median household incomes for each of District 2's five majority HBA census tracts are also lower than the citywide or White household median income, as they range from $41,852 to $54,076.

According to the 2013-2017 5-Year ACS, the majority HBA census tracts in District 1 include a percentage of persons[33] with no High School education ranging from 5.8% to 13.6%, and the majority HBA census tracks in District 2 include a percentage of persons with no High School education ranging from 4.9% to 15.1%. The upper bound of each of these ranges is lower than the share of White residents with no High School education (4.7%), and many of the precincts within these districts rank far below the citywide percentage of persons with no High School education (6.6%).

Three of District 1's majority HBA census tracts include below poverty level percentages that range from 8.4% to 39.1%. These percentages are all higher than the city level of 8.0% or the White population's percentage of 5.8%. The fourth HBA majority census tract in District 1 has lower poverty rates with only 1.5% of persons below the poverty level (census tract 458.09). District 2's majority HBA census tracts have below poverty levels that range from 12.3% to 20.2%. Thus, all of the District 2's majority HBA census tracts have higher below-poverty percentages than the White population's average (5.8%) and the citywide average (8.0%).

According to the five-year 2013-2017 ACS survey, the majority HBA census tracts in District 1 have median housing values that range from $144,400 to $238,600, and in District 2 have median housing values that ranges from $124,600 to $211,000. Meanwhile, the median citywide housing value was $267,000.

Reviewing the socioeconomic data related to the majority HBA districts reveals that the HBA communities have depressed socioeconomic indicators. The vast number of these majority HBA census tracts are shown to have: a) lower median household incomes than the citywide values or White median household incomes; b) higher percentage of persons with no High School education compared to the citywide values or White persons throughout the city; c) higher below poverty levels than the citywide levels or levels for White persons throughout the city; and d) lower median housing values than the citywide values.

[33] For persons above the age of 25 years old.

VIII. Conclusions

A. Virginia Beach, VA Demographic Profile

The City of Virginia Beach has seen significant growth in Hispanic, Black and Asian population during the past 27 years. In addition, analysis of census tract data reveals that most Hispanic, Black and Asian persons reside in the same communities. During the same time period, the white population has decreased in number.

Based on census tract comparisons, the city's majority HBA communities experience lower socioeconomic outcomes than the city's population overall, as well as the city's white population. I conclude that in the categories of median household income and median housing values, the HBA communities generally possess significantly lower income and housing values than White households or the city at large. I also conclude that the HBA community's below poverty percentage and no high school education percentage are significantly higher than the city at large.

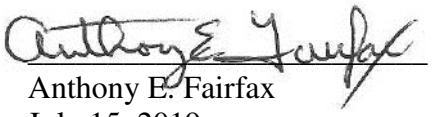
B. Virginia Beach, VA Majority HBA Districts

The Illustrative Plan demonstrates that two majority HBA districts can be created for the City of Virginia Beach using a 10-district scheme. The Illustrative Plan verifies that majority HBA districts can be developed by adhering to commonly used traditional redistricting principles such as equal population, contiguity, compactness, minimizing political subdivision splits, and preservation of communities of interest. In addition, the socioeconomic data from ACS confirm that the majority HBA communities within the Illustrative Plan's districts share similar socioeconomic realities and form communities of interest.

During the process of developing the final Illustrative Plan, other configurations that also resulted in majority HBA districts were observed. Therefore, although this analysis focused on one demonstrative plan for majority HBA districts, it does not represent the only configuration that can be developed for majority HBA districts in the city of Virginia Beach, VA. Thus, I conclude that other formations of majority HBA districts can be created. Furthermore, I conclude that it is feasible to create a district where Hispanics and Blacks combined are in the majority.

Finally, given the results of the Illustrative Plan analysis, I conclude that the minority population in the city of Virginia Beach, VA is sufficiently large and geographically compact to enable the creation of two single-member majority Hispanic, Black and Asian combined districts.

I, Anthony E. Fairfax, am over the age of 18 and fully competent to make this declaration. I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct to the best of my knowledge.



Anthony E. Fairfax
July 15, 2019

Appendix A

GIS/Redistricting Experience

Anthony "Tony" Fairfax

16 Castle Haven Road, Hampton, Virginia 23666
Office Telephone: (757) 838-3881/Home Telephone: (757) 838-0832
Email: fairfax@censuschannel.com

Experience Highlights:

- Demographic, Geographic & Voter Data Analysis
- Multiple GIS Software/Census Data Skillset
- Redistricting Plan Development & Analysis
- Expert Report Development & Court Testimony
- Project Management, Planning & Budgeting
- Client Acquisition, Collaboration & Support
- Professional Presentation/Training Experience
- Manual/Book Publication Development

Education:

Master of Geospatial Information Science and Technology (2016)
North Carolina State University, Raleigh, North Carolina

Graduate Certificate in Geospatial Information Science (2016)
North Carolina State University, Raleigh, North Carolina

Bachelor of Science Degree in Electrical Engineering (1982)
Virginia Tech, Blacksburg, Virginia

Work Experience:

CensusChannel LLC, Hampton, VA (2009 - Present)
CEO & Principal Consultant - Providing overall project management and operations as well as primary consulting services for clients. Also, responsible for customer acquisition and support. Core tasks include GIS-centered services: redistricting support (extensive use and analysis of traditional redistricting criteria or guidelines); demographic/socioeconomic, geographic, voting data; GIS/Census Data/Redistricting training; GIS data processing/conversion; expert redistricting plan development, analysis, depositions, testimony, and training. Major clientele and projects include:

- **Campaign Legal Center, Washington, DC (2018 – Present)** – Developing illustrative redistricting plan, associated expert report, and potentially testifying for *Latasha Holloway v City of Virginia Beach*. The Illustrative Plan includes two majority Hispanic, Black, and Asian combined districts for the purpose of providing evidence of the first prong in *Gingles* for the city of Virginia Beach.
- **NAACP, Baltimore, MD (2018 - Present)** – Providing GIS consulting services for the purpose of building out the NAACP hosted Data Analytics Hub. Specific focus will be to assist in developing voter registration and electoral targeting maps and data for the Data Analytics Hub.
- **Southern Echo, Jackson MS (2018 - Present)** – Providing GIS ready data and GIS training to Southern Echo, community leaders, stakeholders and subsequently in the field to groups working in the following states; Alabama, Arkansas, Georgia, Florida, Louisiana, Mississippi, New Mexico, North Carolina, South Carolina, and Texas. Specifically, the work will entail the development of capacity using the newest version of redistricting software selected. The development of this capacity would be coupled with the generation of GIS data needed for the training programs
- **Southern Coalition for Social Justice [SCSJ], Durham, NC (2015 - 2018)** - Provided several expert reports, depositions and testimony for multiple redistricting court cases in North Carolina. Testimony, depositions and reports included numerous plans at the congressional, state senate, state house, and local jurisdiction level. Analysis covered certain district characteristics, including

population deviation, political subdivision splits, partisan performance, and incumbent effect analysis.

- **The Rehab Crew, Durham, NC (2017)** - Provided geospatial & demographic analysis as well as website development and a proprietary application for use of targeting real estate investment properties.
- **Congressman G.K. Butterfield, NC (2016)** - Developed several congressional district plan alternatives for the State of North Carolina. Provided various analysis on alternative district configurations.
- **Alabama Democratic Conference (ADC), Montgomery, AL (2015 - 2016)** - Developed state senate and house redistricting plans for the state of Alabama in response to the *ADC v Alabama* court case. Also, provided a series of thematic maps depicting areas added from the previous plan to the enacted plan, displaying concentrations of African American voters that were added to the enacted plan.
- **Net Communications, Tallahassee, FL (2014 - 2015)** - Generated offline mapping and online web services (ArcGIS.com) of client's energy company's resources and organizational assets. Mapping included demographic, socioeconomic, and other resources of the energy company.
- **National NAACP Office of General Counsel, Baltimore, MD (2012 - 2013)** - Provided project management and developmental support for the creation of a final report for the NAACP National Redistricting Project. Provided planning, organizing, supplemental writing, and interfacing with graphics entity for the complete development of the final report.
- **Congressional Black Caucus Institute, Washington, DC (2011 - 2012) -** Provided contract duties as the Project Director and Consulting Demographer for the Congressional Black Caucus Institute's Redistricting Project. Provided project management, redistricting plan development, review, analysis, advice, and answers to various questions pertaining to redistricting plans, principles, and processes.
- **Mississippi NAACP, Jackson, MS (2011) -** Developed state senate plans and analyzed enacted plans that were developed by the State Court.
- **African American Redistricting Collaborative (AARC) of California, Los Angeles, CA (2011) -** Provided demographic and redistricting contracted services. Responsible for developing congressional, state senate and state assembly plans for the collaborative. Special focus was given to the southern Los Angeles area (SOLA) and the Bay Area region. In addition to plan development, several socioeconomic maps were developed to show various communities of interest commonalities.

  Developed a demographic profile using maps and reports of California's congressional, state senate, and state assembly districts for the purpose of preparing for the redistricting plan development process by identifying areas of growth throughout the state. The profiles included data from the American Community Survey (ACS) 2005-2009 and the 2010 Census.
- **The Advancement Project, Washington, DC (2011) -** Provided redistricting plan development services and training. Included was the development of a base map for a new seven (7) district plan in New Orleans that were further developed by community groups in Louisiana. The second effort included training a staff person on the use of Maptitude for Redistricting as well as on various redistricting scenarios.
- **Louisiana Legislative Black Caucus (LLBC), Baton Rouge, LA (2011) -** Provided redistricting plan development services. Responsibilities included supporting the Caucus members' efforts to develop state house, state senate, and congressional redistricting plans. Developed or analyzed over eighty

different redistricting plans. The effort also included testifying in front of the Louisiana Senate and Governmental Affairs committee.

- **Community Policy Research & Training Institute (One Voice), Jackson, MS (2011) -** Developed Mississippi State Senate plan along with appropriate reports and large scaled map.
- **National Black Caucus of State Legislators (NBCSL), Washington, DC (2010)** - Provided services as the Project Director for a 2010 census outreach effort. Developed proposal and managed personnel to generate and execute a strategy to utilize black state senate and house legislators to place targeted posters in select hard-to-count (HTC) areas throughout the country.
- **Duke University's Center for REGSS & SCSJ, Durham, NC (2010 - 2011) -** Contracted to serve as one of two Project Coordinators to support an expert preparation workshop hosted by Duke University's REGSS and the Southern Coalition for Social Justice.

Project Coordinator duties included developing, managing, and providing hands-on training for the Political Cartographer's side of a week-long intensive "redistricting expert" preparation workshop. The workshop trained 18 political cartographers, who came from various parts of the country, on all aspects of redistricting plan development and principles. Also, developed two hands-on redistricting scenarios that were developed in order for the workshop to train large audiences on the plan development process without the use of computers.

Democracy South, Virginia Beach, VA (2004 - 2008)
Senior Technical Consultant - Provided technical, GIS mapping, data analysis, and management support for several projects and civic engagement related efforts. Major project efforts included:

- Senior Technical Consultant for the National Unregistered Voter Map. Developed a web-based interactive map that allowed visitors to view state/county level information pertaining to the number of unregistered voters (2009)
- Co-Director of the Hampton Roads Missing Voter Project (a nonpartisan nonprofit voter engagement effort to increase voter participation with a focus on underrepresented population groups). The effort covered the seven major Independent cities in Hampton Roads. Responsibilities included co-managing the overall civic engagement effort and was solely responsible for integrating and processing Catalist voter data into targeting maps and walk lists for all focus areas. Directly Responsible for overseeing the operations in Hampton, Newport News, Portsmouth, and Suffolk, Virginia (2008)
- Senior Technical Consultant for Civic Engagement Efforts. Provided telephone technical voter database support to 17 USAction state partners in 2004; and 12 USAction state partners in 2006. Trained client on VBASE voter data software; Performed voter data conversion; and voter targeting assistance.

Congressional Black Caucus Institute, Redistricting Project, Washington D.C. (2001 - 2003)
Consulting Demographer - Provided services that included the development, review, and analysis for over 75 congressional district plans. Responsible for all setup and configuration of hardware and GIS software. Also, performed the development and analysis of redistricting plans. Congressional district plans were developed for 22 states. Also, performed as a redistricting expert advisor in a consolidated U.S. District court Voting Rights case in Alabama.

National Voter Fund, Washington, D.C. (2000)
GIS Consultant (in a consulting partnership of Hagens & Fairfax) - Developed hundreds of precinct targeting maps for a civic engagement effort designed to increase the turnout in the November 2000 election. Efforts included: geocoding voter data; census data integration; and precinct mapping.

Norfolk State University, Poli. Science & Computer Science Dept., Norfolk, Virginia (1996 - 2001)
Adjunct Faculty - Provided instruction to students for BASIC Programming, Introduction to Computer Science, and Computer Literacy courses.

GeoTek. Inc. (formally GIS Associates), Virginia Beach, VA (1992 - 1995)
Consultant and Co-owner - Provided geodemographic research and analysis; client technical & training support; hardware/software system installation; and redistricting manual/ brochure development. Major clients and tasks included:

- New York City Housing Authority - Redistricting Training
- Maryland State Office of Planning - Redistricting Tech Support
- City of Virginia Beach, VA Planning Dept. - Redistricting Training/Tech Support
- City of Norfolk, VA Registrar - Redistricting Training/Tech Support
- City of Chesapeake, VA Registrar - Precinct Realignment

Norfolk State University, Political Science Dept., Norfolk, Virginia (1991 - 1999)
GIS Consultant - Provided a variety of geographic and demographically related tasks. Major Redistricting related tasks included:

- Installed and operated the LogiSYS ReapS software that was used to perform the bulk of redistricting plans. Performed the intricate ReapS processing of the U.S. Census Bureau Topographically Integrated Geographic Encoded Referencing (TIGER) line files, Public Law 94-171 (PL94-171) demographic data, and the STF socioeconomic data series.
- Developed over 200 hundred redistricting plans, located in over 60 jurisdictions, in the states of Florida, Louisiana, North Carolina, Texas, and Virginia. Developed plans from city/county to legislative to congressional district.
- Traveled to and trained several university faculty personnel on setting up and utilizing the ReapS redistricting system. Also, trained on redistricting plan development principles.

Major GIS related tasks included:

- Performed a study commissioned by the U.S. Department of Transportation to analyze the ethnic differences in commuting behavior. This study extensively utilized the Summary Tape File 3 A (STF3 A) and Public Microdata Sample (PUMS) data to locate, map and report the frequency and average travel time to and from work for: Miami, FL MSA; Kansas City, MO-KS MSA; and Detroit, MI MSA.
- Performed a study funded by the City of Norfolk, VA and NSU School of Business that determined and analyzed the trade area of a section located in Norfolk, VA. Major duties included: geocoding customer addresses; producing address point maps; and developing demographic reports for the project.
- Performed a study commissioned by the U.S. Department of Housing and Urban Development (HUD) to revitalize a neighborhood located in Norfolk, VA. The purpose of the GIS component was to first establish a socioeconomic base-line then track the progress of the revitalized area as well select surrounding areas. Geocoded address locations, generated point as well as demographic thematic maps, and produced reports of the target areas.
- Provided demographic analysis of proposed newly incorporated areas in Florida for local Florida civic organizations.

Cooperative Hampton Roads Org. for Minorities in Engineering, Norfolk, VA (1991 - 1992)
Computer Consultant - Designed and developed a menu driven student database, used to track hundreds of minority Junior High and High School students that were interested in pursuing science or engineering degrees.

Norfolk State University, School of Education, Norfolk VA (1990 - 1991)
Technical Consultant/Computer Lab Manager- Provided a variety of support to include hardware and software installation; faculty workshops; course instruction; Network Administrator; and technical support.

Engineering and Economics Research (EER) Systems (1989)
Technical Consultant - Coordinated and participated in writing, editing, and formatting technical test documents; central role in the development of the Acceptance Test Procedures for the initial phase of a multimillion dollar Combat Maneuver Training Complex (CMTC) in Hohenfels, Germany; the final review and editing of all test documentation.

Executive Training Center (ETC). Newport News, VA (1988 - 1989)
Vice President & Co-owner - Managed over 11 part-time and full-time employees; assisted in developing and implementing company policies; performed the duties of the Network Administrator for a Novell-based computer training network; and taught several courses by substituting for instructors when necessary (1988- 1989).

Engineering & Economics Research (EER) Systems. Newport News, VA (1986 - 1987)
Hardware Design Engineer and Electronics Engineer - Provided engineering and select project management support for development of the following million/multimillion dollar project efforts:

- Baseline Cost Estimate (BCE) to be used in the procurement of the Combat Maneuver Training Complex - Instrumentation System (CMTC-IS)
- Operational and Maintenance (O&M) Support Plan at the National Training Center (NTC)
- Quality Assurance Surveillance Plan for the O&M Support Plan at the NTC; Configuration Management Plan for CMTC
- Requirements Operational Capabilities (ROC) Analysis for an instrumentation System at the U.S. Army Ranger School, Georgia;
- ROC Analysis for an Instrumentation System at Fort Chaffee, Arkansas;
- Suggested Statement of Work for the Digital Data Entry Device (DDED); and the Concept Formulation Package and Requirements Definition to Support interface and integration of Red Flag at the NTC:
- Phase ll of a multi-million dollar GIS-based concept test demonstration. Performing as Assistant Test Director (ATD) - liaison between the Government Director Army Ranges and Targets (DART) personnel and EER Systems' personnel; and assumed the role of Test Director when required (1987).
- Suggested Statement of Work (SOW) for a $1 million procurement of Multivehicle Player Units (MVPUs) at the NTC. Performing as Project Task Manager for a team of engineers, computer programmers, and technical support personnel in the development of a (I986).

Teledyne Hastings-Raydist, Hampton, VA (1982 - 1986)
Hardware Design Engineer - Designed and developed custom flow and vacuum measuring products; Project Manager for the production and completion of a $.25 million flow measuring system; Electrical Engineer - Chiefly responsible for developing special products for customers.

Major Litigation & Testimony Related Efforts:

Campaign Legal Center, Washington, DC (2018 – 2019)
Developed an illustrative redistricting plan and associated expert report for *Latasha Holloway v City of Virginia Beach*. The Illustrative Plan included two majority Hispanic, Black, and Asian combined districts for the purpose of providing evidence of the first prong in *Gingles* for the city of Virginia Beach.

Southern Coalition for Social Justice (SCSJ), Durham, NC (2018)
Developed a demonstrative remedial redistricting plan and associated expert report as well as provided adeposition for *North Carolina State Conference of NAACP Branches v. Lewis* Wake County Superior Court case. The demonstrative remedial plan corrected the two Wake county, NC House Districts declared by a federal court to be racially gerrymandered districts (HD33 & HD38). The expert report provided a narrative that not only discussed my results, but also provided insight for the Court on how a mapdrawer would reasonably go about fixing racially gerrymandered districts and still comply with the state constitution's prohibition on mid-decade redistricting.

Texas NAACP, San Antonio, TX, (2017)
Provided expert testimony, deposition and expert report for the *Perez v. Abbott* US Federal District Court Case. Analysis focused on certain characteristics, including population deviation, compactness, political subdivision splits and communities of interest for congressional and house plans. Additional analysis was performed on demographic projections for certain congressional and state house districts.

Southern Coalition for Social Justice (SCSJ), Durham, NC (2015 - 2016)
Provided expert testimony, deposition and expert report for the *City of Greensboro v The Guilford County Board of Elections* US District Court Case. Deposition and report included several district plans for the city council of Greensboro, NC, and analyzed certain characteristics, including population deviation, political subdivision splits, partisan performance, and incumbent effect analysis.

Provided expert testimony and report for the *Covington v North Carolina* federal redistricting court case. The testimony included analysis from *Dickson v Rucho* (also *NAACP v North Carolina*) of compactness on state legislative house and senate districts.

Provided expert testimony and report for the *Wright v North Carolina* federal redistricting court case. The testimony and report included analysis of population deviation, compactness, partisan impact and incumbent residences for county commission and school board plans.

Alabama Democratic Conference (ADC), Montgomery, AL (2015 - 2016)
Developed senate and house redistricting plans for the state of Alabama for the *ADC v Alabama* court case. Provided deposition on the creation of the plan. Also, generated a series of thematic maps depicting areas added from the previous plan to the enacted plan, displaying concentrations of African American voters that were added to the enacted plan.

Southern Coalition for Social Justice (SCSJ), Durham, NC (2014)
Provided expert testimony, report, and deposition for Federal redistricting court case, *Perez v. Perry* of Texas. The report included analysis of population extrapolations and projections for several submitted plans for select congressional and house districts.

North Carolina NAACP, Raleigh, NC (2012)
Provided expert opinions and analysis in an affidavit for the *NC NAACP v. State of North Carolina* federal redistricting case (later *Dickson v Rucho*). The affidavit included examination of compactness measurements pertaining to the Congressional, State Senate, and State House "Benchmark" plans, several approved plans, and several legislative submitted plans. The report also contained county splits for the target districts.

Southern Coalition for Social Justice (SCSJ), Durham, NC (2011)
Provided expert opinions and analysis in an affidavit for the *Moore v. State of Tennessee* redistricting case. The affidavit included analysis of county splits comparing State Senate "Benchmark" plans, the approved plan, and several legislative submitted plans.

Texas NAACP, San Antonio, TX (2011)
Provided expert testimony, report, and deposition for federal redistricting court case *Perez v. Perry*. Testimony covered the evaluation of traditional redistricting criteria of the Congressional and House approved plans compared to several proposed or legislature submitted plans.

Louisiana Legislative Black Caucus, Baton Rouge, LA (2011)
Provided expert testimony in front of the Senate and Governmental Affairs committee. Testimony included the analysis of two redistricting plans comparing ideal population deviation, political subdivision splits (Parishes); and compactness ratios. Also, developed a redistricting plan and testified in front of the House and Governmental Affairs in support of a new majority minority (African American) congressional district in Louisiana.

Morrison & Foerster LLP, Los Angeles, CA (2004)
Provided expert report on several state senate plans for the *Metts v. Murphy* Rhode Island court case. Report contained analysis of communities of interest areas that were not included in the state's enacted plan of the only majority minority district.

Congressional Black Caucus Institute, Redistricting Project, Washington D.C. (2002)
Performed as the redistricting mapping expert for Congressman Hilliard in a consolidated U.S. District redistricting court case in Alabama (*Montiel v. Davis* and *Barnett v. Alabama*). Developed the submitted plan and provided advice to legal counsel for the court case.

Council of Black Elected Democrats (COBED) New York State, New York, NY (2002)
Performed as one of the redistricting experts (*Allen v Pataki/Rodriguez v Pataki*) by developing several New York State congressional district plans that were presented by COBED.

Miami-Dade, Florida (1993)
Provided expert technical redistricting support as one half of the Expert Master's Team for the remedial plan (*Meek v. Metropolitan Dade County*). Developed over 50 commissioner district plans for the county as well as the final adopted plan for the county.

NAACP Legal Defense and Educational Fund (LDEF), New York, NY (1993)
Provided expert technical support for the *Shaw v. Reno* Supreme Court case (via Norfolk State University). Analyzed and compared various compactness ratios for congressional districts throughout the U.S. The results were compared to the 12th congressional district of North Carolina. Also, developed several alternative congressional district plans.

Major GIS/Demographic/Redistricting Training and Presentations:

Congressional Black Caucus Institute, Washington, DC (2016)
Presented at the annual legislative conference in Tunica, MS. Presented the election demographic analysis and for the 2016 presidential and Senate elections. Panel included Congressman Cedrick Richmond (LA), Congressman Sanford Bishop (GA), and Professor Spencer Overton.

Coalition of Black Trade Unionists (CBTU), Chicago, IL (2015)
Presented at the annual CBTU conference on the election panel that included Congressman Al Green (TX) and Congressman Bobby Rush (IL).

Nobel Women's Initiative, Washington, DC (2015)
Presented on a panel at the annual conference in San Diego, CA on the upcoming 2020 census.

Tennessee NAACP, Nashville, TN (2011)
Provided redistricting training session on the mapping and demographic aspects of Redistricting.

Congressional Black Caucus Institute, Washington, DC (2002 - 2012, 2014)
Presented "The Demographics of Campaigns" twelve times at the institute's annual political campaign "Boot Camp." The presentation covers how to locate and utilize demographic data for political campaigns.

Congressional Black Caucus Foundation (CBCF), Washington, DC (2011)
Presented as one of the panelist at the" Judge A. Leon Higginbotham" Braintrust at the CBC Annual Legislative Conference. The panel was moderated by Congressman Mel Watt.

The Advancement Project, Washington, DC (2011)
Trained staff GIS person on Maptitude for Redistricting as well as on redistricting scenarios.

National Association for the Advancement of Colored People, Baltimore, MA (2011)
Provided training session on "Redistricting Mapping Overview" at the organization's national redistricting training seminar for state and local chapters.

Congressional Black Caucus Institute, Washington, DC (2010)
Presented at the annual CBC Institute conference in Tunica, MS (The panel included Congressman John Lewis and Congressman Jim Clyburn). Outlined two critical issues that would surface in the 2010 round of redistricting: 1) Prison-based Gerrymander; and 2) The Use of Citizen Voting Age Population (CVAP).

Community Census and Redistricting Institute (CCRI), Durham, NC (2010)
Developed, managed, and provided hands-on training for the Political Cartographer's side of a week-long intensive "redistricting expert" preparation workshop. The workshop trained 18 political cartographers on all aspects of plan development.

North Carolina University's Center for Civil Rights, Chapel Hill, NC (2010)
Provided presentation on "Redistricting Laws & GIS" at the *Unfinished Work* conference. The presentation outlined the evolution of major redistricting laws and GIS and their impact on minority representation.

NAACP Legal Defense Fund AIRLIE Conference, AIRLIE, VA (2010)
Provided training using hands-on "paper" redistricting scenario to voting rights advocates on developing a plan without the use of computers.

Young Elected Officials, Los Angeles, CA (2010)
Provided training using hands-on "paper" redistricting scenario to young legislators on developing a plan without the use of computers.

Young Elected Officials, Alexandria, VA (2010)
Provided overview training on the major aspects of redistricting to young legislators.

North Carolina University's Center for Civil Rights, Chapel Hill, NC (2006)
Provided presentation on "Congressional Elections Won by African Americans Race & Ethnicity District Perspective (1960 - 2004)" at the *Who Draws the Lines? The Consequences of Redistricting Reform for Minority Voters* conference.

Howard University - Continuing Education - HBCU GIS Workshop, Washington, DC (2002)
Provided presentation on redistricting and the use Maptitude for Redistricting to faculty members of Historically Black Colleges and Universities (HBCUs).

Norfolk State University Redistricting Project Training Workshops (1991 - 1998)
Provided redistricting training to the following:

- Alabama State University, Montgomery, Alabama
- Albany State University, Albany, Georgia
- Florida A & M, Tallahassee, Florida
- National Conference of Black Political Scientists, Atlanta, Georgia Conference
- Norfolk State University, Norfolk, Virginia
- North Carolina A & T State University, Greensboro, North Carolina
- North Carolina Central University, Durham, North Carolina
- Southern University, Baton Rouge, Louisiana
- Williams College, Williamstown, Massachusetts

Major GIS/Redistricting/Voter Data Software Experience:

- ArcGIS - GIS Software - Primary GIS Software after 2012 (ESRI)
- ArcGIS Online – Including Story Maps & Web Application Builder (ArcGIS.com)
- GRASS GIS – Open Source GIS (OSGeo)
- Maptitude for Redistricting - Primary Redistricting software, since 2001 (Caliper)
- ESRI Redistricting Online - Beta Tester (ESRI)
- Public Mapping Project - Advisory Board Member (an open source online software)
- GIS Plus (the precursor to Maptitude Software in the mid to late 1990s) - User (Caliper)
- ReapS Redistricting and Reapportionment System - Redistricting software, 1990s (LogiSYS)
- Voter Activation Network System NPGVAN
- Voterlistonline.com Aristotle software Aristotle
- VBASE voter database software

GIS Skillset/Coding Languages:

- Geocoding Data
- Linear Referencing
- Digital Cardinality
- Spatial Statistics
- Suitability Analysis
- Image Classification
- ArcGIS Web Services
- pdAdmin
- Python
- PostgreSQL

ESRI Certificates:

- Learning ArcGIS Desktop (for ArcGIS 10) - 24 hrs training
- Turning Data into Information Using ArcGIS 10 - 18 hrs training
- Basics of Raster Data (for ArcGIS 10) - 3 hrs training
- Using Raster Data for Site Selection (for ArcGIS 10) - 3 hrs training
- Working with Geodatabase Domains and Subtypes in ArcGIS - 3 hrs training
- Network Analysis Using ArcGIS - 3 hrs training

Publications:

Books

- *An Introduction to the Presidential Trend*, Statistical Press, March 2015
- *The Presidential Trend*, Statistical Press, December 2013
- *The Democratic Trend Phenomenon*, MediaChannel LLC, October 2008.
- *A Step by Step Guide to Using Census 2000 Data*, MediaChannel LLC, March 2004. Also Included, a companion CD-ROM (sold through various Census related workshops and training sessions and used in a political science course).

Manuals

- *A Beginner's Guide To Using Census 2000 Data*, November 2002 (Co-authored- developed for the U.S. Census Bureau's Census Information Centers)

Articles

- "Precision Voter Targeting: GIS Maps Out a Strategy," Geo Info Systems, November 1996 (Co-authored one of the first articles published on using modern day GIS for voter targeting).

Current Advisory Boards

- Virginia Tech Electrical and Computer Engineering (ECE) Advisory Board (Term: 2016 to 2020)
- First Baptist Church of Hampton Trustee Board (Term: 2015 to 2019)

Appendix B

Demographic Profile of Virginia Beach, VA

- Total Population for 1990, 2000, 2010, 2017 (Major Race & Ethnicity)
- Voting Age Population for 1990, 2000, 2010, 2017 (Major Race & Ethnicity)
- CVAP for 2000, 2008-2012 & 2013-2017 5Yr ACS, 2017 1Yr ACS (Major Race & Ethnicity)
- Socioeconomic Profiles (Income, Below Poverty, Education, Housing Values)

Appendix B1

Demographic Profile of Virginia Beach, VA

- Total Population for 1990, 2000, 2010, 2017 (Major Race & Ethnicity)

Virginia Beach, VA
1990 Total/Voting Age Population by Major Race/Ethnicty

	Total	%	VAP	%
TTLPop	393069	100.00%	283182	100.00%
Hispanic	12137	3.09%	7933	2.80%
White	309712	78.79%	227727	80.42%
Black	53720	13.67%	35811	12.65%
Asian	15920	4.05%	10675	3.77%

Note: Races are Not Hispanic

Source: U.S. Census Bureau 1990 Census Data PL94-171 File (Imported into Microsoft Excel, percentages calculated and reformatted)

U.S. Census Bureau

AMERICAN FactFinder

PL002

HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE [73]
Universe: Total population
Census 2000 Redistricting Data (Public Law 94-171) Summary File

Note: This is a modified view of the original table.

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see http://www.census.gov/prod/cen2000/doc/pl94-171.pdf

	Virginia Beach city, Virginia
Total:	425,257
Hispanic or Latino	17,770
Not Hispanic or Latino:	407,487
Population of one race:	397,829
White alone	295,402
Black or African American alone	79,092
American Indian and Alaska Native alone	1,448
Asian alone	20,618
Native Hawaiian and Other Pacific Islander alone	356
Some other race alone	913
Population of two or more races:	9,658

U.S. Census Bureau

AMERICAN FactFinder

P2

HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE

Universe: Total population

2010 Census Redistricting Data (Public Law 94-171) Summary File

Note: This is a modified view of the original table.

NOTE: For information on confidentiality protection, nonsampling error, and definitions, see http://www.census.gov/prod/cen2010/pl94-171.pdf

NOTE: Change to the California,Connecticut,Mississippi,New Hampshire,Virginia, and Washington P. L. 94-171 Summary Files as delivered.

	Virginia Beach city, Virginia
Total:	437,994
Hispanic or Latino	28,987
Not Hispanic or Latino:	409,007
Population of one race:	394,806
White alone	282,470
Black or African American alone	83,210
American Indian and Alaska Native alone	1,349
Asian alone	26,312
Native Hawaiian and Other Pacific Islander alone	602
Some Other Race alone	863
Two or More Races:	14,201

Source: U.S. Census Bureau, 2010 Census.

U.S. Census Bureau

AMERICAN FactFinder

B03002

HISPANIC OR LATINO ORIGIN BY RACE

Universe: Total population

2017 American Community Survey 1-Year Estimates

Note: This is a modified view of the original table.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

	Virginia Beach city, Virginia	
	Estimate	Margin of Error
Total:	450,435	*****
Not Hispanic or Latino:	413,712	*****
White alone	277,338	+/-548
Black or African American alone	82,181	+/-2,651
American Indian and Alaska Native alone	887	+/-852
Asian alone	29,735	+/-1,779
Native Hawaiian and Other Pacific Islander alone	306	+/-321
Some other race alone	878	+/-755
Two or more races:	22,387	+/-3,192
Hispanic or Latino:	36,723	*****

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2017 American Community Survey (ACS) data generally reflect the July 2015 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas, in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineations due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.

Appendix B2

Demographic Profile of Virginia Beach, VA

- Voting Age Population for 1990, 2000, 2010, 2017 (Major Race & Ethnicity)

Virginia Beach, VA
1990 Total/Voting Age Population by Major Race/Ethnicty

	Total	%	VAP	%
TTLPop	393069	100.00%	283182	100.00%
Hispanic	12137	3.09%	7933	2.80%
White	309712	78.79%	227727	80.42%
Black	53720	13.67%	35811	12.65%
Asian	15920	4.05%	10675	3.77%

Note: Races are Not Hispanic

Source: U.S. Census Bureau 1990 Census Data PL94-171 File (Imported into Microsoft Excel, percentages calculated and reformatted)

U.S. Census Bureau

AMERICAN FactFinder

PL004

HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE FOR THE POPULATION 18 YEARS AND OVER [73]
Universe: Total population 18 years and over
Census 2000 Redistricting Data (Public Law 94-171) Summary File

Note: This is a modified view of the original table.

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see http://www.census.gov/prod/cen2000/doc/pl94-171.pdf

	Virginia Beach city, Virginia
Total:	308,369
Hispanic or Latino	11,274
Not Hispanic or Latino:	297,095
Population of one race:	292,415
White alone	222,538
Black or African American alone	52,283
American Indian and Alaska Native alone	1,090
Asian alone	15,828
Native Hawaiian and Other Pacific Islander alone	277
Some other race alone	399
Population of two or more races:	4,680

U.S. Census Bureau

AMERICAN FactFinder

P4 | HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE FOR THE POPULATION 18 YEARS AND OVER
Universe: Total population 18 years and over
2010 Census Redistricting Data (Public Law 94-171) Summary File

Note: This is a modified view of the original table.

NOTE: For information on confidentiality protection, nonsampling error, and definitions, see http://www.census.gov/prod/cen2010/pl94-171.pdf

NOTE: Change to the California,Connecticut,Mississippi,New Hampshire,Virginia, and Washington P. L. 94-171 Summary Files as delivered.

	Virginia Beach city, Virginia
Total:	332,745
Hispanic or Latino	18,765
Not Hispanic or Latino:	313,980
Population of one race:	307,355
White alone	224,188
Black or African American alone	60,212
American Indian and Alaska Native alone	1,053
Asian alone	20,978
Native Hawaiian and Other Pacific Islander alone	460
Some Other Race alone	464
Two or More Races:	6,625

Source: U.S. Census Bureau, 2010 Census.

U.S. Census Bureau

AMERICAN FactFinder

B05003I

SEX BY AGE BY NATIVITY AND CITIZENSHIP STATUS (HISPANIC OR LATINO)

Universe: People who are Hispanic or Latino

2017 American Community Survey 1-Year Estimates

Note: This is a modified view of the original table.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

	Virginia Beach city, Virginia	
	Estimate	Margin of Error
Total:	36,723	*****
Male:	18,431	*****
18 years and over:	12,724	*****
Female:	18,292	*****
18 years and over:	12,906	*****

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2017 American Community Survey (ACS) data generally reflect the July 2015 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas, in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineations due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because

U.S. Census Bureau

AMERICAN FactFinder

B05003H

SEX BY AGE BY NATIVITY AND CITIZENSHIP STATUS (WHITE ALONE, NOT HISPANIC OR LATINO)

Universe: White alone, not Hispanic or Latino population

2017 American Community Survey 1-Year Estimates

Note: This is a modified view of the original table.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

	Virginia Beach city, Virginia	
	Estimate	Margin of Error
Total:	277,338	+/-548
Male:	137,864	+/-176
18 years and over:	110,225	+/-77
Female:	139,474	+/-402
18 years and over:	113,627	+/-272

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2017 American Community Survey (ACS) data generally reflect the July 2015 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas, in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineations due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates

Explanation of Symbols:

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U.S. Census Bureau

AMERICAN FactFinder

B05003B

SEX BY AGE BY NATIVITY AND CITIZENSHIP STATUS (BLACK OR AFRICAN AMERICAN ALONE)

Universe: People who are Black or African American alone

2017 American Community Survey 1-Year Estimates

Note: This is a modified view of the original table.

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Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

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	Virginia Beach city, Virginia	
	Estimate	Margin of Error
Total:	85,486	+/-2,915
Male:	40,534	+/-1,640
18 years and over:	30,770	+/-891
Female:	44,952	+/-1,874
18 years and over:	34,788	+/-1,193

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2017 American Community Survey (ACS) data generally reflect the July 2015 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas, in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineations due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
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6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because

U.S. Census Bureau

AMERICAN FactFinder

B05003D

SEX BY AGE BY NATIVITY AND CITIZENSHIP STATUS (ASIAN ALONE)

Universe: People who are Asian alone

2017 American Community Survey 1-Year Estimates

Note: This is a modified view of the original table.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

	Virginia Beach city, Virginia	
	Estimate	Margin of Error
Total:	30,751	+/-1,889
Male:	14,309	+/-1,103
18 years and over:	11,433	+/-706
Female:	16,442	+/-1,143
18 years and over:	14,382	+/-831

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2017 American Community Survey (ACS) data generally reflect the July 2015 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas, in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineations due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
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5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because

Appendix B3

Demographic Profile of Virginia Beach, VA

- CVAP for 2000, 2008-2012 & 2013-2017 5Yr ACS, 2017 1Yr ACS (Major Race & Ethnicity)

Virginia Beach, VA
2000 CVAP by Major Race/Ethnicty

	CVAP	%
TtlPop	298470	100.00%
Hisp	8605	2.88%
White	218685	73.27%
Black	51055	17.11%
Asian	11785	3.95%

Note: Races are Not Hispanic

Source: U.S. Census Bureau 2000 Census (Special Tabulation) File (imported into Microsoft Excel, percentages calculated and reformatted)

Virginia Beach, VA
2008-2012 5-Yr ACS Citizen Voting Age Population by Major Race/Ethnicty

	TTLPop	MOE	%	VAP	MOE	%	CVAP	MOE	%
Total	439530		100.00%	334565		100.00%	320785	1062	100.00%
Hispanic	29365		6.68%	19215		5.74%	16185	517	5.05%
White	283945	29	64.60%	225285	29	67.34%	220845	516	68.85%
Black	82025	1039	18.66%	60145	526	17.98%	58805	521	18.33%
Asian	27605	536	6.28%	21810	427	6.52%	17100	628	5.33%
HBA	138995		31.62%	661020		30.24%	633720		28.71%

Note: Races are Not Hispanic

Source: U.S. Census Bueau 2008-2012 5-Year ACS county CVAP Dataset (Special Tabulation) imported into Microsoft Excel. Summed HBA totals and Percentages calculated
https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.2014.html

Virginia Beach, VA
2013-2017 5-Yr ACS Citizen Voting Age Population by Major Race/Ethnicty

	TTLPop	MOE	%	VAP	MOE	%	CVAP	MOE	%
Total	450055	0	100.00%	348265	0	100.00%	334515	1059	100.00%
Hispanic	35255	0	7.83%	24240	0	6.96%	20265	554	6.06%
White	281675	28	62.59%	226225	28	64.96%	222635	597	66.55%
Black	83290	951	18.51%	62850	612	18.05%	62150	664	18.58%
Asian	29330	638	6.52%	24065	419	6.91%	18805	671	5.62%
HBA	147875		32.86%	111155		31.92%	101220		30.26%

Note: Races are Not Hispanic

Source: U.S. Census Bueau 2012-2017 5-Year ACS county CVAP Dataset (Special Tabulation) imported into Microsoft Excel. Summed HBA totals and Percentages calculated
https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.2014.html

U.S. Census Bureau

AMERICAN FactFinder

S2901 | CITIZEN, VOTING-AGE POPULATION BY SELECTED CHARACTERISTICS

2017 American Community Survey 1-Year Estimates

Note: This is a modified view of the original table.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

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Subject	Virginia Beach city, Virginia			
	Total		Percent	
	Estimate	Margin of Error	Estimate	Margin of Error
Citizens 18 years and over	334,824	+/-3,228	(X)	(X)
RACE AND HISPANIC ORIGIN				
White alone	229,808	+/-2,874	68.6%	+/-0.7
Black or African American alone	65,071	+/-1,719	19.4%	+/-0.5
Asian alone	20,180	+/-1,831	6.0%	+/-0.5
American Indian and Alaska Native alone	N	N	N	N
Native Hawaiian and Other Pacific Islander alone	N	N	N	N
Some Other Race alone	6,310	+/-1,732	1.9%	+/-0.5
Two or More Races	N	N	N	N
Hispanic or Latino	21,066	+/-1,405	6.3%	+/-0.4
White alone, Not Hispanic or Latino	218,891	+/-2,259	65.4%	+/-0.6

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

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Source: U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were

Appendix B4

Socioeconomic Profile of Virginia Beach, VA

Income, Below Poverty, Education, Housing Values

U.S. Census Bureau

AMERICAN FactFinder

S1903 | MEDIAN INCOME IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)

2017 American Community Survey 1-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

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Subject	Virginia Beach city, Virginia				
	Number		Percent Distribution		Median income (dollars)
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Households	168,818	+/-2,960	168,818	+/-2,960	72,586
One race--					
White	116,629	+/-2,778	69.1%	+/-1.2	80,486
Black or African American	32,428	+/-1,849	19.2%	+/-1.0	52,681
American Indian and Alaska Native	N	N	N	N	N
Asian	10,969	+/-1,227	6.5%	+/-0.7	74,869
Native Hawaiian and Other Pacific Islander	N	N	N	N	-
Some other race	N	N	N	N	34,974
Two or more races	N	N	N	N	69,524
Hispanic or Latino origin (of any race)	10,866	+/-1,005	6.4%	+/-0.6	57,042
White alone, not Hispanic or Latino	111,055	+/-2,561	65.8%	+/-1.1	80,995
HOUSEHOLD INCOME BY AGE OF HOUSEHOLDER					
15 to 24 years	7,386	+/-1,420	4.4%	+/-0.8	40,050
25 to 44 years	61,199	+/-2,381	36.3%	+/-1.1	70,968
45 to 64 years	63,528	+/-1,657	37.6%	+/-1.0	89,349
65 years and over	36,705	+/-1,156	21.7%	+/-0.7	65,549
FAMILIES					
Families	115,950	+/-3,300	115,950	+/-3,300	86,305
With own children of householder under 18 years	49,637	+/-2,822	42.8%	+/-1.9	76,127
With no own children of householder under 18 years	66,313	+/-2,616	57.2%	+/-1.9	91,481
Married-couple families	84,751	+/-3,522	73.1%	+/-2.2	101,661
With own children under 18 years	33,091	+/-2,293	28.5%	+/-1.8	101,731
Female householder, no husband present	21,431	+/-2,049	18.5%	+/-1.7	46,658
With own children under 18 years	11,025	+/-1,566	9.5%	+/-1.3	34,021
Male householder, no wife present	9,768	+/-1,658	8.4%	+/-1.4	52,103
With own children under 18 years	5,521	+/-1,327	4.8%	+/-1.1	44,611
FAMILY INCOME BY FAMILY SIZE					
2-person families	(X)	(X)	(X)	(X)	77,146

U.S. Census Bureau

AMERICAN FactFinder

S1701 | POVERTY STATUS IN THE PAST 12 MONTHS

2017 American Community Survey 1-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

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Subject	Virginia Beach city, Virginia				
	Total		Below poverty level		Percent below poverty level
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Population for whom poverty status is determined	440,174	+/-2,150	35,394	+/-5,811	8.0%
AGE					
Under 18 years	99,091	+/-691	10,516	+/-2,905	10.6%
Under 5 years	28,453	+/-503	3,053	+/-1,189	10.7%
5 to 17 years	70,638	+/-452	7,463	+/-2,341	10.6%
Related children of householder under 18 years	98,828	+/-763	10,253	+/-2,905	10.4%
18 to 64 years	280,537	+/-2,009	21,495	+/-3,796	7.7%
18 to 34 years	110,341	+/-1,890	12,534	+/-2,833	11.4%
35 to 64 years	170,196	+/-441	8,961	+/-1,791	5.3%
60 years and over	88,918	+/-1,944	4,911	+/-1,067	5.5%
65 years and over	60,546	+/-314	3,383	+/-810	5.6%
SEX					
Male	214,596	+/-1,855	16,123	+/-2,915	7.5%
Female	225,578	+/-1,118	19,271	+/-3,746	8.5%
RACE AND HISPANIC OR LATINO ORIGIN					
White alone	287,528	+/-2,984	17,342	+/-3,202	6.0%
Black or African American alone	82,970	+/-2,880	11,914	+/-3,894	14.4%
American Indian and Alaska Native alone	N	N	N	N	N
Asian alone	30,641	+/-1,871	1,181	+/-662	3.9%
Native Hawaiian and Other Pacific Islander alone	N	N	N	N	N
Some other race alone	11,482	+/-2,683	3,101	+/-1,905	27.0%
Two or more races	26,065	+/-3,312	1,797	+/-1,026	6.9%
Hispanic or Latino origin (of any race)	35,312	+/-578	5,490	+/-2,127	15.5%
White alone, not Hispanic or Latino	271,156	+/-1,459	16,062	+/-2,920	5.9%
EDUCATIONAL ATTAINMENT					
Population 25 years and over	303,989	+/-1,180	17,759	+/-2,669	5.8%
Less than high school graduate	19,591	+/-2,320	3,035	+/-994	15.5%
High school graduate (includes equivalency)	65,420	+/-3,758	4,410	+/-1,263	6.7%
Some college, associate's degree	111,161	+/-4,009	7,333	+/-1,526	6.6%

U.S. Census Bureau

AMERICAN FactFinder

S1501 | EDUCATIONAL ATTAINMENT

2017 American Community Survey 1-Year Estimates

Note: This is a modified view of the original table.

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Subject	Virginia Beach city, Virginia	
	Total	Percent
	Estimate	Estimate
Percent high school graduate or higher	(X)	93.5%
White alone, not Hispanic or Latino	200,473	(X)
High school graduate or higher	190,674	95.1%
Black alone	55,416	(X)
High school graduate or higher	50,597	91.3%
Asian alone	23,826	(X)
High school graduate or higher	21,550	90.4%
Hispanic or Latino Origin	20,863	(X)
High school graduate or higher	17,677	84.7%

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

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Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were

U.S. Census Bureau

AMERICAN FactFinder

CP04

COMPARATIVE HOUSING CHARACTERISTICS

2017 American Community Survey 1-Year Estimates

Note: This is a modified view of the original table.

Geographic areas are based on the geographic boundaries of the data year. Current year comparisons with past-year estimates are not re-tabulated to the current year's geographies; rather, the comparison is with the existing geography of each data year. Statistically significant change from prior years' estimates could be the result of changes in the geographic boundaries of an area and not necessarily the demographic, social, or economic characteristics. For more information on geographic changes, see: https://www.census.gov/programs-surveys/acs/guidance.html.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Subject	Virginia Beach city, Virginia
	2017 Estimate
VALUE	
Owner-occupied units	108,813
Median (dollars)	282,300

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

The definitions of the metropolitan and micropolitan statistical areas for the 2013 American Community Survey are based on the commuting patterns identified in the 2010 Census. Estimates prior to 2013 are based on the results of the 2000 Census. Statistically significant change from prior years' estimates could be the result of changes in the metropolitan geographic definitions and not necessarily the demographic, social or economic characteristic. For more information, see: Metropolitan and Micropolitan Statistical Areas.

Households not paying cash rent are excluded from the calculation of median gross rent.

For the 5 year ACS, 2008-2012 plumbing data for Puerto Rico will not be shown. Research indicates that the questions on plumbing facilities that were introduced in 2008 in the stateside American Community Survey and the 2008 Puerto Rico Community Survey may not have been appropriate for Puerto Rico. New questions resolved the problem by 2013.

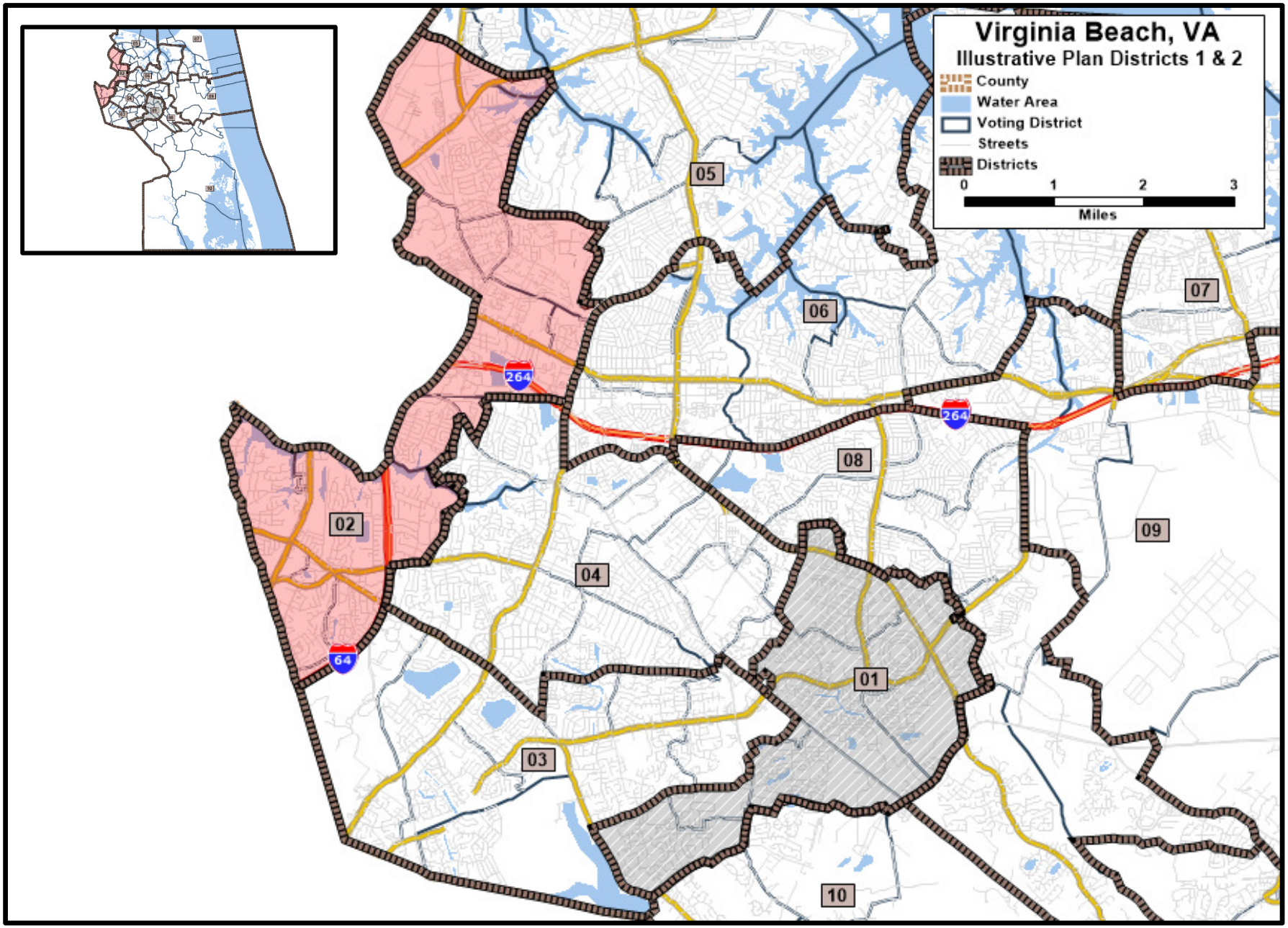
For both the US and Puerto Rico, complete plumbing in 2016 and later are not directly comparable to complete plumbing in 2015 and prior years. In 2016, the question about whether the housing unit had a toilet was no longer asked. In 2015 and prior years, the requirements for complete plumbing were running water, a flush toilet and bathtub or shower; in 2016 and later, the requirement for complete plumbing is running water and bathtub or shower.

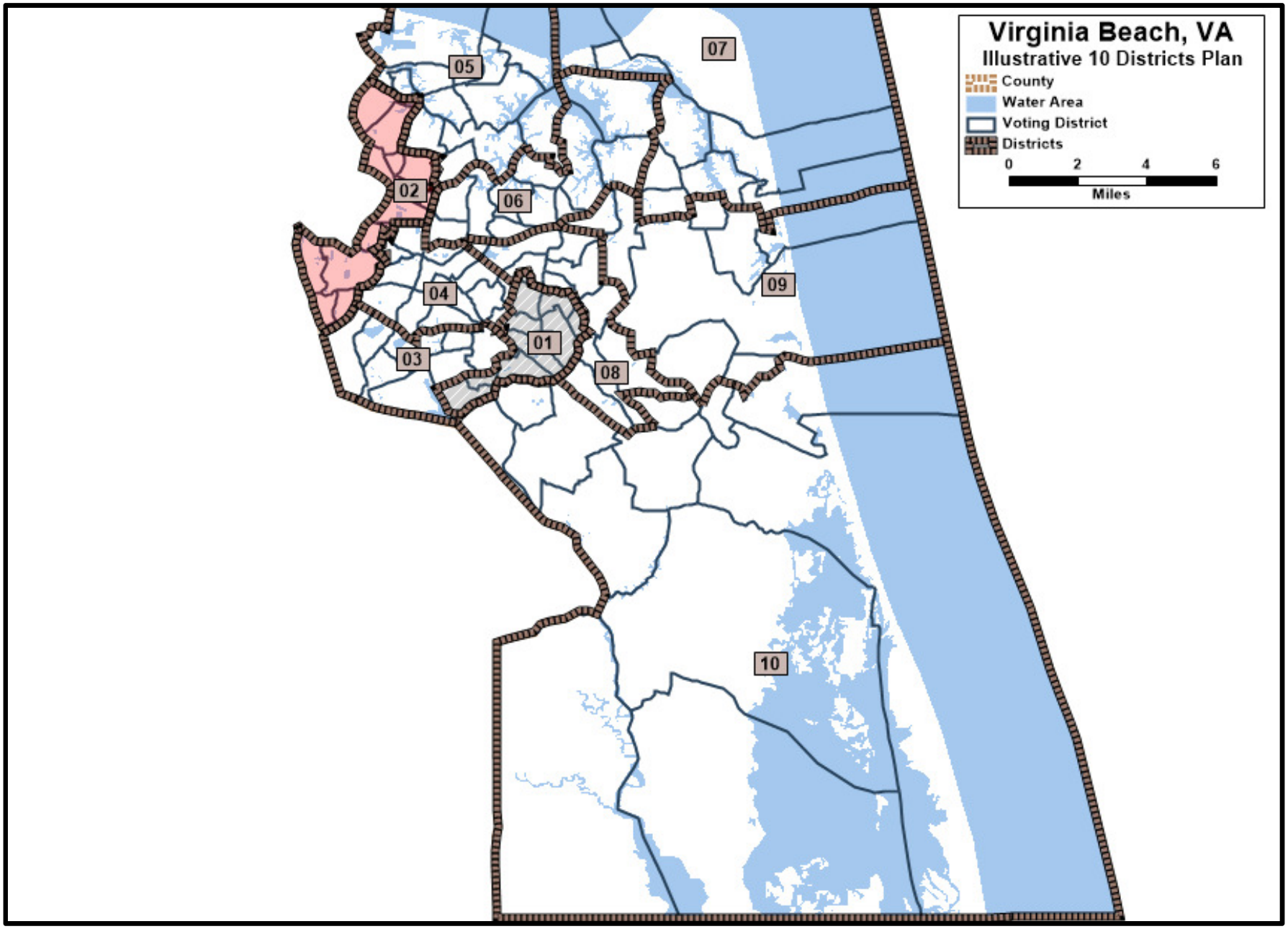
Telephone service data are not available for certain geographic areas due to problems with data collection of this question that occurred

Appendix C

Illustrative Plan Maps

Current City Council Residency Map


Virginia Beach, VA
Illustrative Plan Districts 1 & 2
County
Water Area
Voting District
Streets
Districts
0
1
2
3
Miles
01
02
03
04
05
06
07
08
09
10
264
264
64


Virginia Beach, VA
Illustrative 10 Districts Plan
County
Water Area
Voting District
Districts
0 2 4 6
Miles
01
02
03
04
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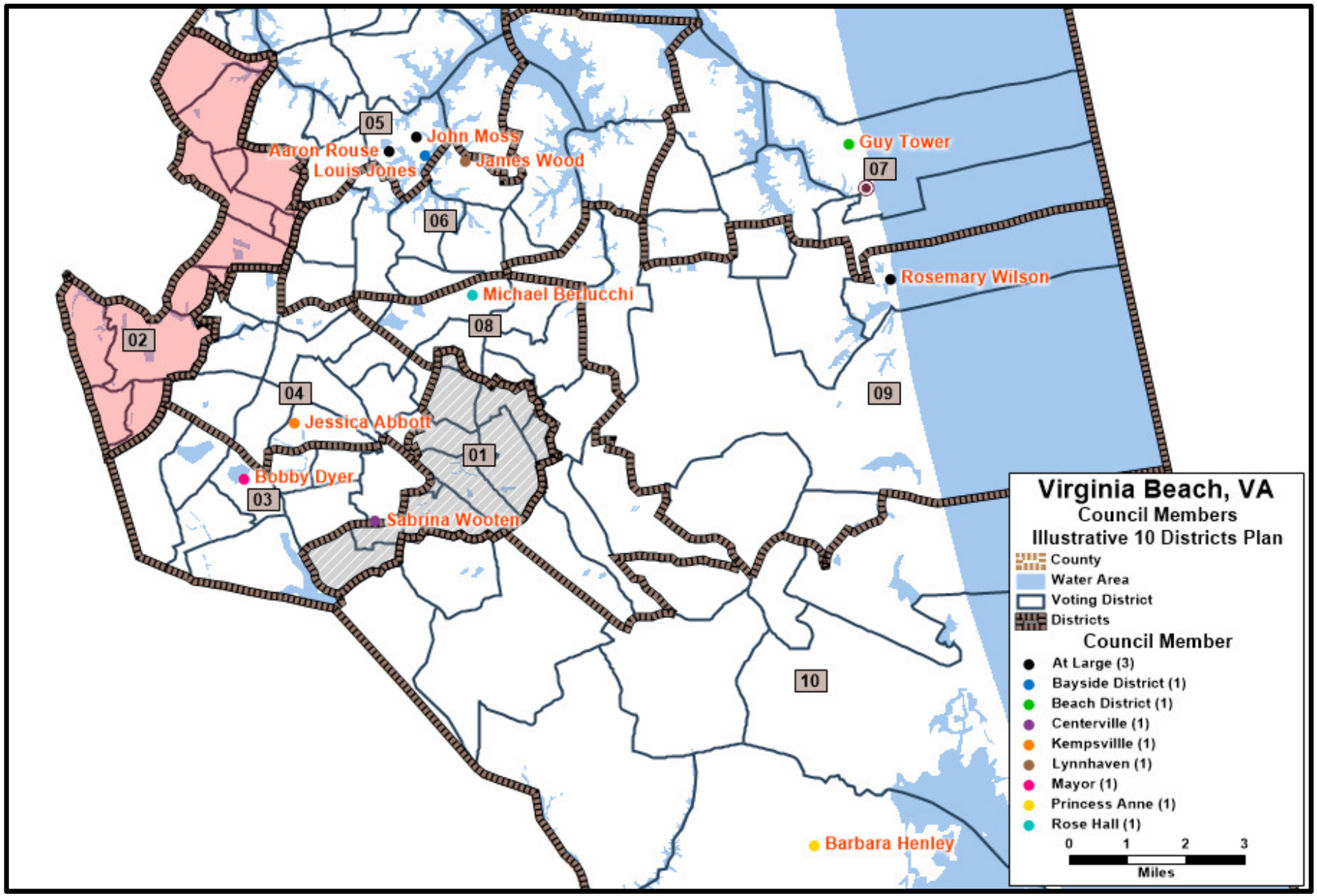
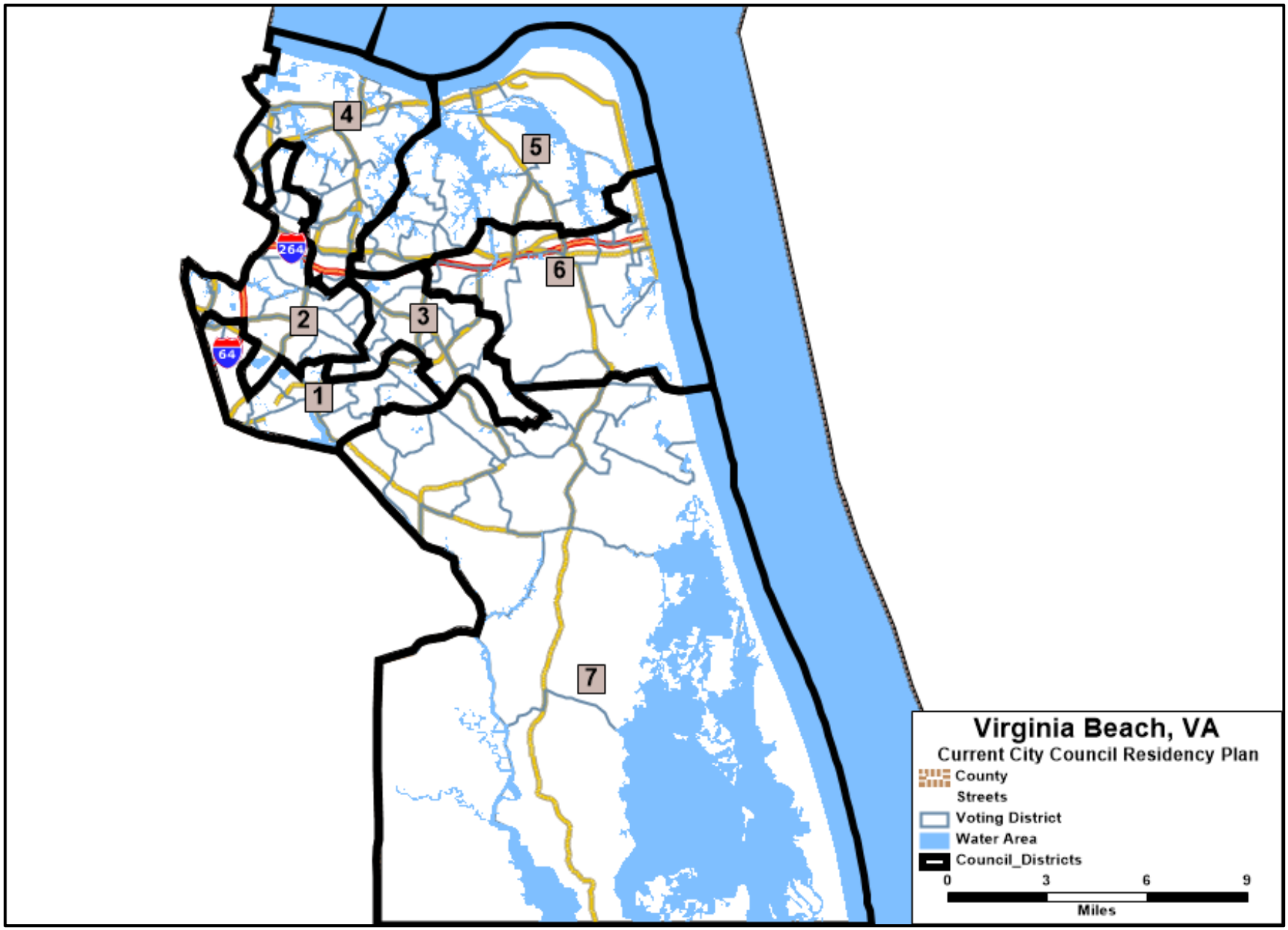
07
08
09
10


05
John Moss
Aaron Rouse
Louis Jones
James Wood
Guy Tower
07
06
Rosemary Wilson
Michael Bellucchi
08
02
04
09
Jessica Abbott
01
Bobby Dyer
03
Sabrina Wooten
10
Barbara Henley
Virginia Beach, VA
Council Members
Illustrative 10 Districts Plan
County
Water Area
Voting District
Districts
Council Member
At Large (3)
Bayside District (1)
Beach District (1)
Centerville (1)
Kempsvillle (1)
Lynnhaven (1)
Mayor (1)
Princess Anne (1)
Rose Hall (1)
0 1 2 3
Miles


4
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3
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7
264
64
Virginia Beach, VA
Current City Council Residency Plan
County
Streets
Voting District
Water Area
Council_Districts
0
3
6
9
Miles

Appendix D

Illustrative Plan District Statistics

City Council Residency Plan District Statistics

Virginia Beach, VA
Illustrative Plan -10 Districts Statistics

District	Population	Deviation	% Deviation	Hispanic	% Hispanic	NH_Wht	% NH_Wht	NH_Blk	% NH_Blk	NH_Asn	% NH_Asn	HBATTL	HBATTL%
01	43956	157	0.36%	4125	9.38%	18743	42.64%	13540	30.80%	5378	12.24%	23043	52.42%
02	41709	-2090	-4.77%	2958	7.09%	18166	43.55%	17211	41.26%	1736	4.16%	21905	52.52%
03	43643	-156	-0.36%	2940	6.74%	22948	52.58%	10175	23.31%	5611	12.86%	18726	42.91%
04	44629	830	1.90%	2539	5.69%	28841	64.62%	8129	18.21%	3332	7.47%	14000	31.37%
05	43278	-521	-1.19%	2424	5.60%	32507	75.11%	4901	11.32%	1971	4.55%	9296	21.48%
06	44273	474	1.08%	2551	5.76%	33614	75.92%	5017	11.33%	1632	3.69%	9200	20.78%
07	44872	1073	2.45%	2499	5.57%	36743	81.88%	3429	7.64%	922	2.05%	6850	15.27%
08	43295	-504	-1.15%	3399	7.85%	27381	63.24%	8158	18.84%	2345	5.42%	13902	32.11%
09	43366	-433	-0.99%	3408	7.86%	29275	67.51%	7556	17.42%	1232	2.84%	12196	28.12%
10	44973	1174	2.68%	2144	4.77%	34252	76.16%	5094	11.33%	2153	4.79%	9391	20.88%

District	18+_Pop	Deviation	% Deviation	H18+_Pop	% H18+_Pop	NH18+_Wht	% NH18+_Wht	NH18+_Blk	% NH18+_Blk	NH18+_Asn	% NH18+_Asn	HBAVAP	HBAVAP%
01	31790	157	0.36%	2639	8.30%	14545	45.75%	9381	29.51%	4202	13.22%	16222	51.03%
02	31433	-2090	-4.77%	1925	6.12%	15081	47.98%	12138	38.62%	1416	4.50%	15479	49.24%
03	32329	-156	-0.36%	1804	5.58%	17682	54.69%	7402	22.90%	4559	14.10%	13765	42.58%
04	34105	830	1.90%	1654	4.85%	23004	67.45%	5864	17.19%	2680	7.86%	10198	29.90%
05	34460	-521	-1.19%	1654	4.80%	26721	77.54%	3717	10.79%	1571	4.56%	6942	20.15%
06	34100	474	1.08%	1726	5.06%	26549	77.86%	3762	11.03%	1288	3.78%	6776	19.87%
07	36351	1073	2.45%	1699	4.67%	30571	84.10%	2562	7.05%	763	2.10%	5024	13.82%
08	31972	-504	-1.15%	2122	6.64%	20991	65.65%	5941	18.58%	1900	5.94%	9963	31.16%
09	32796	-433	-0.99%	2184	6.66%	23354	71.21%	5318	16.22%	992	3.02%	8494	25.90%
10	33409	1174	2.68%	1358	4.06%	25690	76.90%	4127	12.35%	1607	4.81%	7092	21.23%

District	Total17	Deviation	% Deviation	Hisp17	% Hisp17	White17	% White17	Black17	% Black17	Asian17	% Asian17	HBA17	HBA17%
01	42275	157	0.36%	4010	9.49%	17289	40.90%	12735	30.12%	5513	13.04%	22258	52.65%
02	44440	-2090	-4.77%	4279	9.63%	18616	41.89%	17425	39.21%	2457	5.53%	24161	54.37%
03	44455	-156	-0.36%	4400	9.90%	22331	50.23%	9418	21.19%	5487	12.34%	19305	43.43%
04	45546	830	1.90%	3234	7.10%	28214	61.95%	7978	17.52%	4034	8.86%	15246	33.47%
05	44997	-521	-1.19%	3328	7.40%	33013	73.37%	5079	11.29%	1767	3.93%	10174	22.61%
06	45408	474	1.08%	3184	7.01%	32109	70.71%	5382	11.85%	2185	4.81%	10751	23.68%
07	45643	1073	2.45%	2098	4.60%	36139	79.18%	4409	9.66%	1224	2.68%	7731	16.94%
08	45390	-504	-1.15%	4393	9.68%	28900	63.67%	7325	16.14%	2689	5.92%	14407	31.74%
09	44583	-433	-0.99%	4076	9.14%	28953	64.94%	7816	17.53%	1432	3.21%	13324	29.89%
10	47320	1174	2.68%	2253	4.76%	35506	75.03%	5420	11.45%	2267	4.79%	9940	21.01%

District	CVAP17	Deviation	% Deviation	HCVAP17	% HCVAP17	WCVAP17	% WCVAP17	BCVAP17	% BCVAP17	ACVAP17	% ACVAP17	HBACVAP17	% HBACVAP17	HBAWCVP17	% HBAWCVP17
01	29761	157	0.36%	2176	7.31%	13730	46.13%	9135	30.69%	3566	11.98%	14888	50.03%	15210	51.11%
02	32804	-2090	-4.77%	2235	6.81%	15543	47.38%	12810	39.05%	1367	4.17%	16415	50.04%	16755	51.08%
03	31960	-156	-0.36%	2542	7.95%	17346	54.27%	7413	23.19%	3403	10.65%	13365	41.82%	13569	42.46%
04	33802	830	1.90%	1839	5.44%	22251	65.83%	6098	18.04%	2684	7.94%	10612	31.39%	10730	31.74%
05	34689	-521	-1.19%	1911	5.51%	26622	76.74%	4042	11.65%	1182	3.41%	7133	20.56%	7247	20.89%
06	34447	474	1.08%	1899	5.51%	25733	74.70%	4107	11.92%	1431	4.15%	7430	21.57%	7538	21.88%
07	35686	1073	2.45%	1150	3.22%	29635	83.04%	3279	9.19%	799	2.24%	5228	14.65%	5398	15.13%
08	33660	-504	-1.15%	2522	7.49%	22645	67.28%	5319	15.80%	1815	5.39%	9658	28.69%	10079	29.94%
09	32843	-433	-0.99%	2417	7.36%	22753	69.28%	5572	16.97%	878	2.67%	8863	26.99%	9218	28.07%
10	34848	1174	2.68%	1532	4.40%	26347	75.61%	4353	12.49%	1675	4.81%	7559	21.69%	7749	22.24%

Note: Variables with 17 suffix denote 2013-2017 5-Year ACS; HBAWCVP17 includes Hispanic, Black, and Asian CVAP plus Black and White CVAP mixed persons

Source: Maptitude for Redistricting District Statistics window using U.S. Census Bureau 2010 Census Data and 2013-2017 5-Year ACS Data

Virginia Beach, VA
City Council Residency Plan - 7 Districts Statistics

District	Population	Deviation	% Deviation	Hispanic	% Hispanic	NH_Wht	% NH_Wht	NH_Blk	% NH_Blk	NH_Asn	% NH_Asn	HBATTL	HBATTL%
1	60776	-1795	-2.87%	4440	7.31%	28727	47.27%	17267	28.41%	7448	12.25%	29155	47.97%
2	65196	2625	4.20%	3467	5.32%	38869	59.62%	16299	25.00%	4220	6.47%	23986	36.79%
3	63764	1193	1.91%	5796	9.09%	32803	51.44%	16691	26.18%	5369	8.42%	27856	43.69%
4	61484	-1087	-1.74%	4047	6.58%	42005	68.32%	10215	16.61%	2898	4.71%	17160	27.91%
5	61316	-1255	-2.01%	2754	4.49%	51291	83.65%	4171	6.80%	1586	2.59%	8511	13.88%
6	60635	-1936	-3.09%	5004	8.25%	40163	66.24%	11167	18.42%	1612	2.66%	17783	29.33%
7	64823	2252	3.60%	3479	5.37%	48612	74.99%	7400	11.42%	3179	4.90%	14058	21.69%

District	18+_Pop	Deviation	% Deviation	H18+_Pop	% H18+_Pop	NH18+_Wht	% NH18+_Wht	NH18+_Blk	% NH18+_Blk	NH18+_Asn	% NH18+_Asn	HBAVAP	HBAVAP%
01	44501	-1795	-2.87%	2793	4.60%	22127	49.72%	12297	27.63%	5951	13.37%	21041	47.28%
02	49988	2625	4.20%	2271	3.48%	31394	62.80%	11654	23.31%	3458	6.92%	17383	34.77%
03	46905	1193	1.91%	3636	5.70%	25653	54.69%	11792	25.14%	4278	9.12%	19706	42.01%
04	48429	-1087	-1.74%	2751	4.47%	34610	71.47%	7535	15.56%	2308	4.77%	12594	26.01%
05	47976	-1255	-2.01%	1807	2.95%	41023	85.51%	3089	6.44%	1244	2.59%	6140	12.80%
06	47239	-1936	-3.09%	3325	5.48%	33079	70.02%	8033	17.01%	1329	2.81%	12687	26.86%
07	47707	2252	3.60%	2182	3.37%	36302	76.09%	5812	12.18%	2410	5.05%	10404	21.81%

District	CVAP17	Deviation	% Deviation	HCVAP17	% HCVAP17	WCVAP17	% WCVAP17	BCVAP17	% BCVAP17	ACVAP17	% ACVAP17	HBACVAP17	% HBACVAP17	HBAWCVP17	% HBAWCVP17
01	44162	-1795	-2.87%	3014	6.82%	22233	50.34%	12709	28.78%	4537	10.27%	20275	45.91%	20585	46.61%
02	51182	2625	4.20%	3086	6.03%	30899	60.37%	12517	24.46%	3497	6.83%	19110	37.34%	19375	37.86%
03	46266	1193	1.91%	3814	8.24%	26275	56.79%	10457	22.60%	3851	8.32%	18112	39.15%	18702	40.42%
04	48844	-1087	-1.74%	3051	6.25%	34264	70.15%	8041	16.46%	1940	3.97%	13014	26.64%	13297	27.22%
05	47766	-1255	-2.01%	1620	3.39%	40101	83.95%	3259	6.82%	1448	3.03%	6335	13.26%	6476	13.56%
06	47844	-1936	-3.09%	3150	6.58%	32613	68.17%	9253	19.34%	1005	2.10%	13412	28.03%	13917	29.09%
07	48436	2252	3.60%	2488	5.14%	36220	74.78%	5892	12.16%	2522	5.21%	10893	22.49%	11141	23.00%

Note: Variables with 17 suffix denotes 2013-2017 5-Year ACS; HBAWCVP17 includes Hispanic, Black, and Asian CVAP plus Black and White CVAP mixed persons

Source: City of Virginia Beach Shapefiles; Maptitude for Redistricting District Statistics window using U.S. Census Bureau 2010 Census Data and 2013-2017 5-Year ACS Data

Appendix E

Illustrative Plan Contiguity

User:
Plan Name: **VAB Illustrative Plan Final**
Plan Type:

Contiguity Report

Saturday, June 8, 2019 6:40 PM

District	Number of Distinct Areas
1	1
2	1

Appendix F

Illustrative Plan Compactness

Current City Council Residency Plan Compactness

User:
Plan Name: **VAB Illustrative Plan Final 10 Dist**
Plan Type:

Measures of Compactness Report

Monday, July 8, 2019 10:02 PM

Sum	N/A	0.00	N/A	N/A
Min	0.24	N/A	0.20	0.58
Max	0.56	N/A	0.56	0.90
Mean	0.40	N/A	0.38	0.76
Std. Dev.	0.12	N/A	0.12	0.11

District	Reock	Perimeter	Polsby-Popper	MinConvexPoly
01	0.36		0.31	0.67
02	0.24		0.20	0.58
03	0.43		0.46	0.79
04	0.56		0.41	0.81
05	0.38		0.41	0.85
06	0.29		0.31	0.76
07	0.53		0.56	0.86
08	0.24		0.20	0.58
09	0.41		0.40	0.81
10	0.53		0.53	0.90

User:
Plan Name: **VAB 2019 Residency City Council**
Plan Type:

Measures of Compactness Report

Monday, July 8, 2019 10:20 PM

Sum	N/A	0.00	N/A	N/A
Min	0.29	N/A	0.21	0.58
Max	0.54	N/A	0.55	0.91
Mean	0.39	N/A	0.37	0.76
Std. Dev.	0.10	N/A	0.15	0.14

District	Reock	Perimeter	Polsby-Popper	MinConvexPoly
1	0.29		0.26	0.66
2	0.34		0.21	0.58
3	0.30		0.21	0.60
4	0.30		0.31	0.83
5	0.48		0.54	0.85
6	0.47		0.48	0.89
7	0.54		0.55	0.91

Appendix G

Illustrative Plan Political Subdivision Splits

Current City Council Residency Plan Political Subdivision Splits

User:
Plan Name: **VAB Illustrative Plan Final 10 Dist**
Plan Type:

Political Subdivison Splits Between Districts

Friday, July 12, 2019 12:43 PM

Total number of subdivisions:

County	0
Voting District	82

Number of subdivisions split into more than one district:

County	1
Voting District	12

Number of splits involving no population:

County	0
Voting District	0

Split Counts

County

Cases where an area is split among 10 Districts: 1

Voting District

Cases where an area is split among 2 Districts: 12

County	Voting District	District	Population
Split Counties:			
Virginia Beach City VA		01	43,956
Virginia Beach City VA		02	41,709
Virginia Beach City VA		03	43,643
Virginia Beach City VA		04	44,629
Virginia Beach City VA		05	43,278
Virginia Beach City VA		06	44,273
Virginia Beach City VA		07	44,872
Virginia Beach City VA		08	43,295
Virginia Beach City VA		09	43,366
Virginia Beach City VA		10	44,973
Split VTDs:			
Virginia Beach City VA	Aragona	02	1,844
Virginia Beach City VA	Aragona	06	5,436
Virginia Beach City VA	Arrowhead	02	2,949
Virginia Beach City VA	Arrowhead	04	1,767
Virginia Beach City VA	Bayside	02	899
Virginia Beach City VA	Bayside	05	1,462
Virginia Beach City VA	Bonney	02	688
Virginia Beach City VA	Bonney	06	2,754
Virginia Beach City VA	Dahlia	01	6,293
Virginia Beach City VA	Dahlia	04	1,417
Virginia Beach City VA	Holland	01	4,420
Virginia Beach City VA	Holland	08	3,400
Virginia Beach City VA	Magic Hollow	01	3,396

Political Subdivison Splits Between Districts

VAB Illustrative Plan Final 10

County	Voting District	District	Population
Virginia Beach City VA	Magic Hollow	08	3,913
Virginia Beach City VA	Point O' View	02	462
Virginia Beach City VA	Point O' View	04	2,882
Virginia Beach City VA	Rosemont Forest	01	1,770
Virginia Beach City VA	Rosemont Forest	03	3,953
Virginia Beach City VA	Shannon	04	2,877
Virginia Beach City VA	Shannon	08	451
Virginia Beach City VA	Timberlake	01	4,350
Virginia Beach City VA	Timberlake	04	2,184
Virginia Beach City VA	Windsor Oaks	01	1,197
Virginia Beach City VA	Windsor Oaks	08	5,310

User:
Plan Name: **VAB 2019 Residency City Council**
Plan Type:

Political Subdivison Splits Between Districts

Thursday, July 11, 2019 8:38 PM

Total number of subdivisions:

County	0
Voting District	66

Number of subdivisions split into more than one district:

County	1
Voting District	28

Number of splits involving no population:

County	0
Voting District	7

Split Counts

County

Cases where an area is split among 7 Districts: 1

Voting District

Cases where an area is split among 2 Districts: 26
Cases where an area is split among 3 Districts: 1
Cases where an area is split among 4 Districts: 1

County	Voting District	District	Population
Split Counties:			
Virginia Beach City VA		1	60,776
Virginia Beach City VA		2	65,196
Virginia Beach City VA		3	63,764
Virginia Beach City VA		4	61,484
Virginia Beach City VA		5	61,316
Virginia Beach City VA		6	60,635
Virginia Beach City VA		7	64,823
Split VTDs:			
Virginia Beach City VA	Avalon	1	583
Virginia Beach City VA	Avalon	2	4,004
Virginia Beach City VA	Baker	2	4,930
Virginia Beach City VA	Baker	4	1,629
Virginia Beach City VA	Bonney	2	688
Virginia Beach City VA	Bonney	4	2,754
Virginia Beach City VA	Brookwood	3	3,001
Virginia Beach City VA	Brookwood	6	1,810
Virginia Beach City VA	College Park	1	3,515
Virginia Beach City VA	College Park	2	0
Virginia Beach City VA	Corporate Landing	6	4,262
Virginia Beach City VA	Corporate Landing	7	2,349
Virginia Beach City VA	Davis Corner	2	4,750
Virginia Beach City VA	Davis Corner	4	1,378

Political Subdivison Splits Between Districts

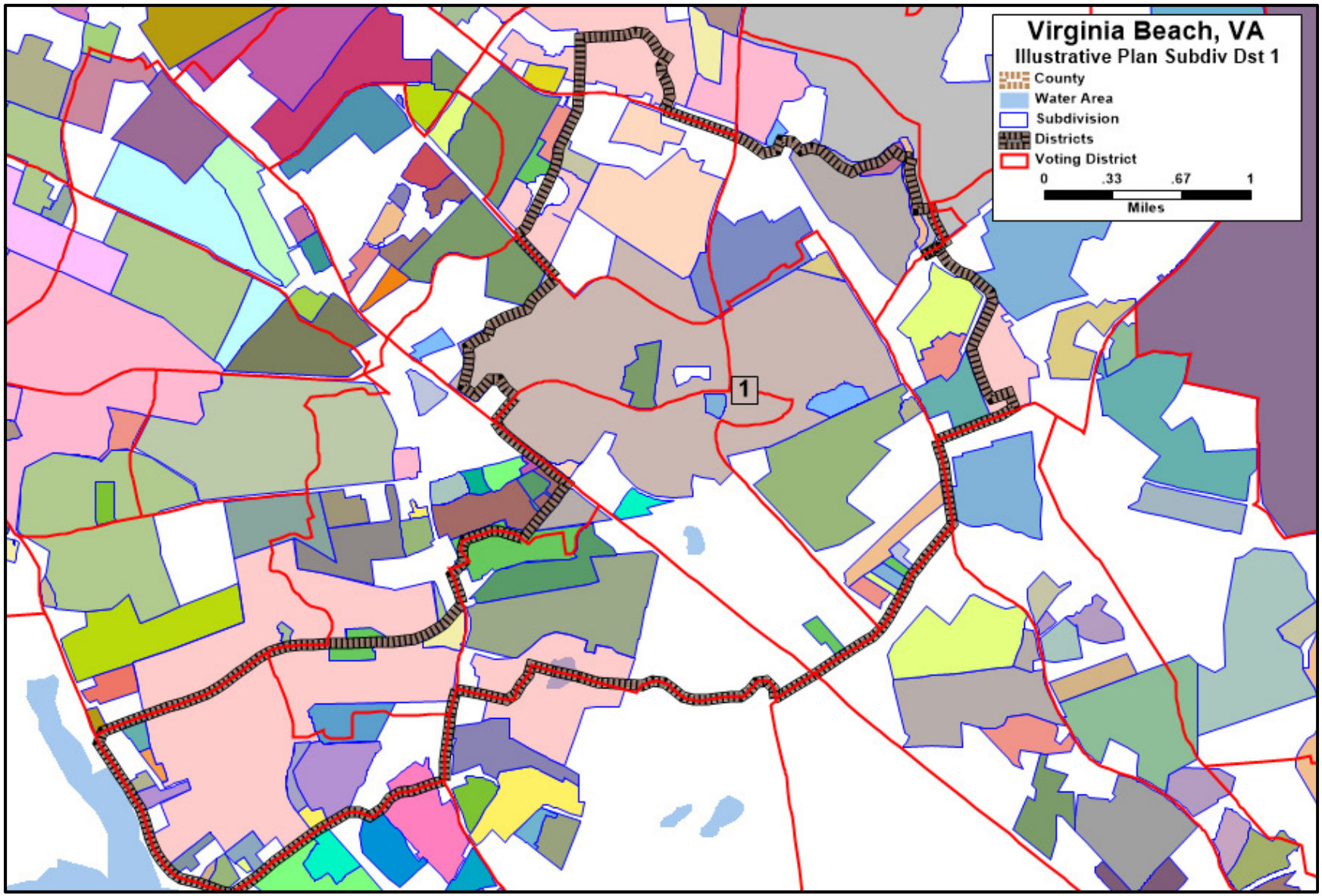
VAB 2019 Residency City Cou

County	Voting District	District	Population
Virginia Beach City VA	Eastern Shore	5	0
Virginia Beach City VA	Eastern Shore	6	7,856
Virginia Beach City VA	Hunt	3	123
Virginia Beach City VA	Hunt	7	3,602
Virginia Beach City VA	Indian Lakes	1	0
Virginia Beach City VA	Indian Lakes	3	3,963
Virginia Beach City VA	Landstown	3	2
Virginia Beach City VA	Landstown	7	4,970
Virginia Beach City VA	Larkspur	2	1,729
Virginia Beach City VA	Larkspur	3	1,503
Virginia Beach City VA	Lexington	2	1,039
Virginia Beach City VA	Lexington	3	4,218
Virginia Beach City VA	Linkhorn	5	2,629
Virginia Beach City VA	Linkhorn	6	2,285
Virginia Beach City VA	Mt.Trashmore	3	4,515
Virginia Beach City VA	Mt.Trashmore	6	1,551
Virginia Beach City VA	North Beach	5	1,639
Virginia Beach City VA	North Beach	6	2,752
Virginia Beach City VA	Pembroke	4	3,886
Virginia Beach City VA	Pembroke	5	2,119
Virginia Beach City VA	Pleasant Hill	2	1,843
Virginia Beach City VA	Pleasant Hill	4	2,531
Virginia Beach City VA	Providence	2	3,920
Virginia Beach City VA	Providence	3	0
Virginia Beach City VA	Redwing	6	6,815
Virginia Beach City VA	Redwing	7	765
Virginia Beach City VA	Rosemont Forest	1	3,971
Virginia Beach City VA	Rosemont Forest	3	1,752
Virginia Beach City VA	Shannon	2	2,877
Virginia Beach City VA	Shannon	3	451
Virginia Beach City VA	Shannon	4	0
Virginia Beach City VA	Shannon	5	0
Virginia Beach City VA	Shelbourne	3	5
Virginia Beach City VA	Shelbourne	7	3,651
Virginia Beach City VA	Shell	2	4,011
Virginia Beach City VA	Shell	4	505
Virginia Beach City VA	Sherry Park	1	37
Virginia Beach City VA	Sherry Park	2	2,462
Virginia Beach City VA	Strawbridge	3	3,865
Virginia Beach City VA	Strawbridge	6	2
Virginia Beach City VA	Strawbridge	7	1,264
Virginia Beach City VA	Tallwood	1	5,459
Virginia Beach City VA	Tallwood	2	0
Virginia Beach City VA	Timberlake	1	3,296
Virginia Beach City VA	Timberlake	3	3,238

Appendix H

Illustrative Plan Communities of Interest

(Maps with Neighborhood Subdivisions)


Virginia Beach, VA
Illustrative Plan Subdiv Dst 1
County
Water Area
Subdivision
Districts
Voting District
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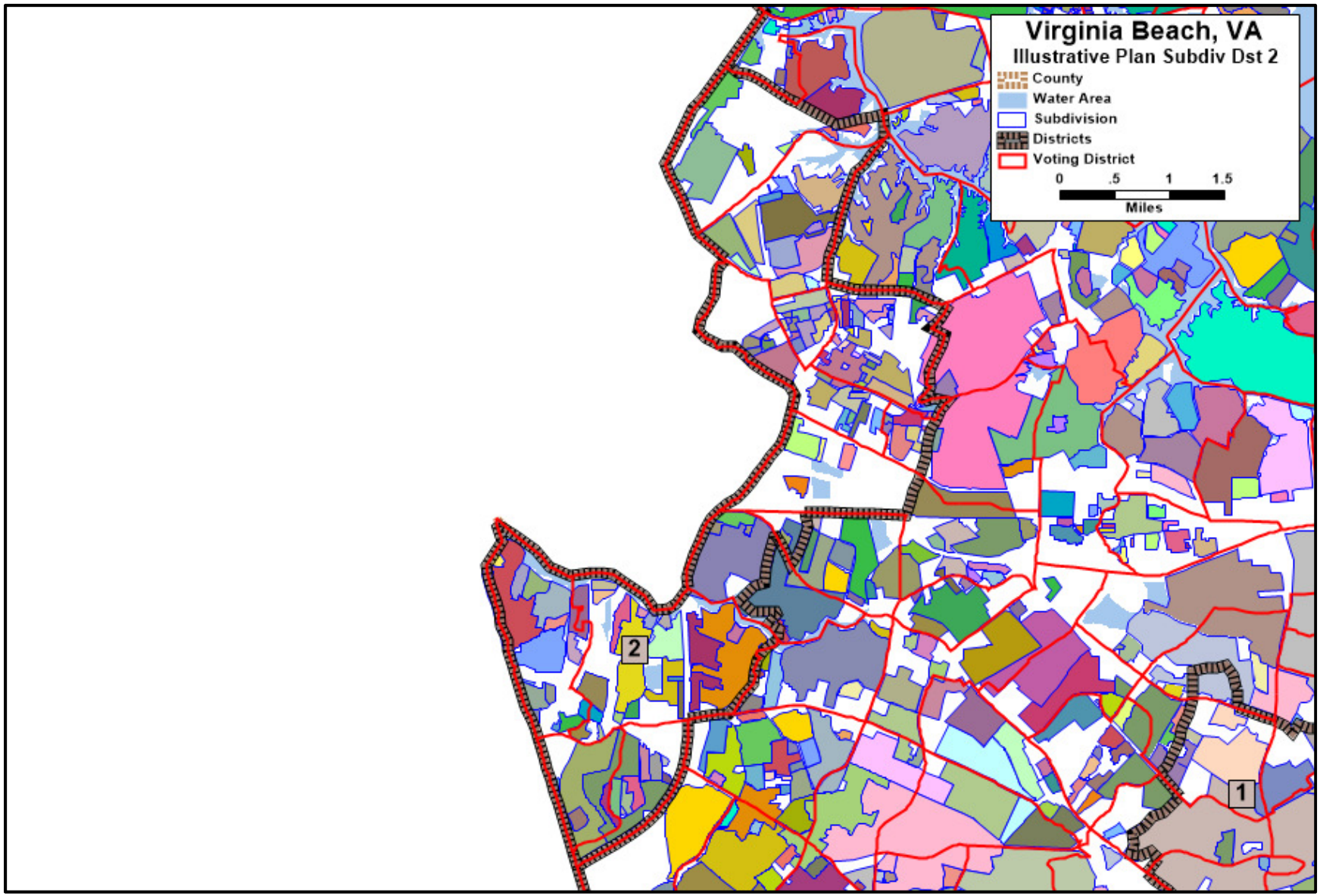
.67
1
Miles
1


Virginia Beach, VA
Illustrative Plan Subdiv Dst 2
County
Water Area
Subdivision
Districts
Voting District
0 .5 1 1.5
Miles
2
1

Appendix I

Majority HBA Census Tract Map/

Illustrative Plan Socioeconomic Characteristics

(Income, Education, Poverty, Housing Values)

District 1 - Majority HBA Census Tracts (2013-2017 5Yr ACS)

- 454.06, 458.09, 458.10, 460.13

District 2 - Majority HBA Census Tracts (2013-2017 5Yr ACS)

- 402, 404.02, 406, 462.20, and 462.21

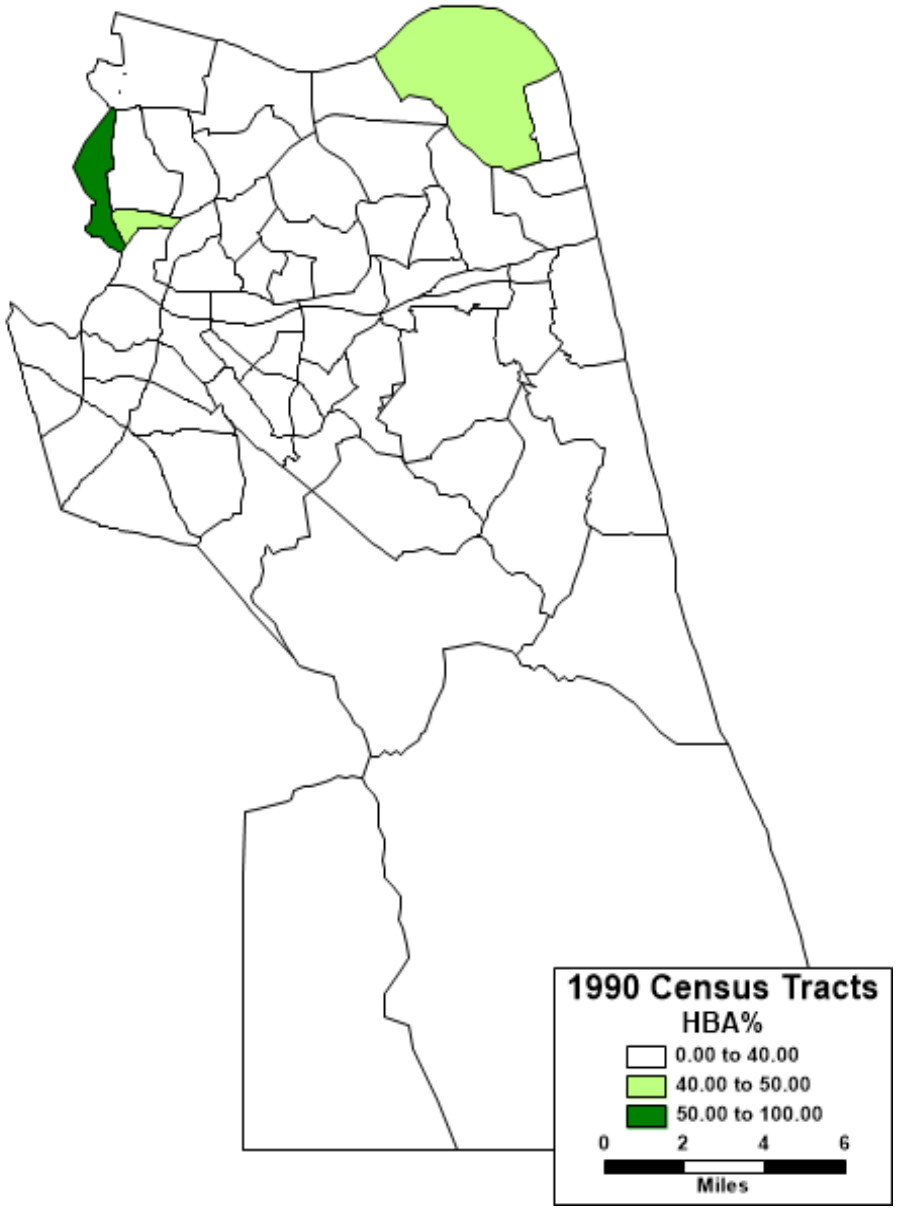
Appendix I1

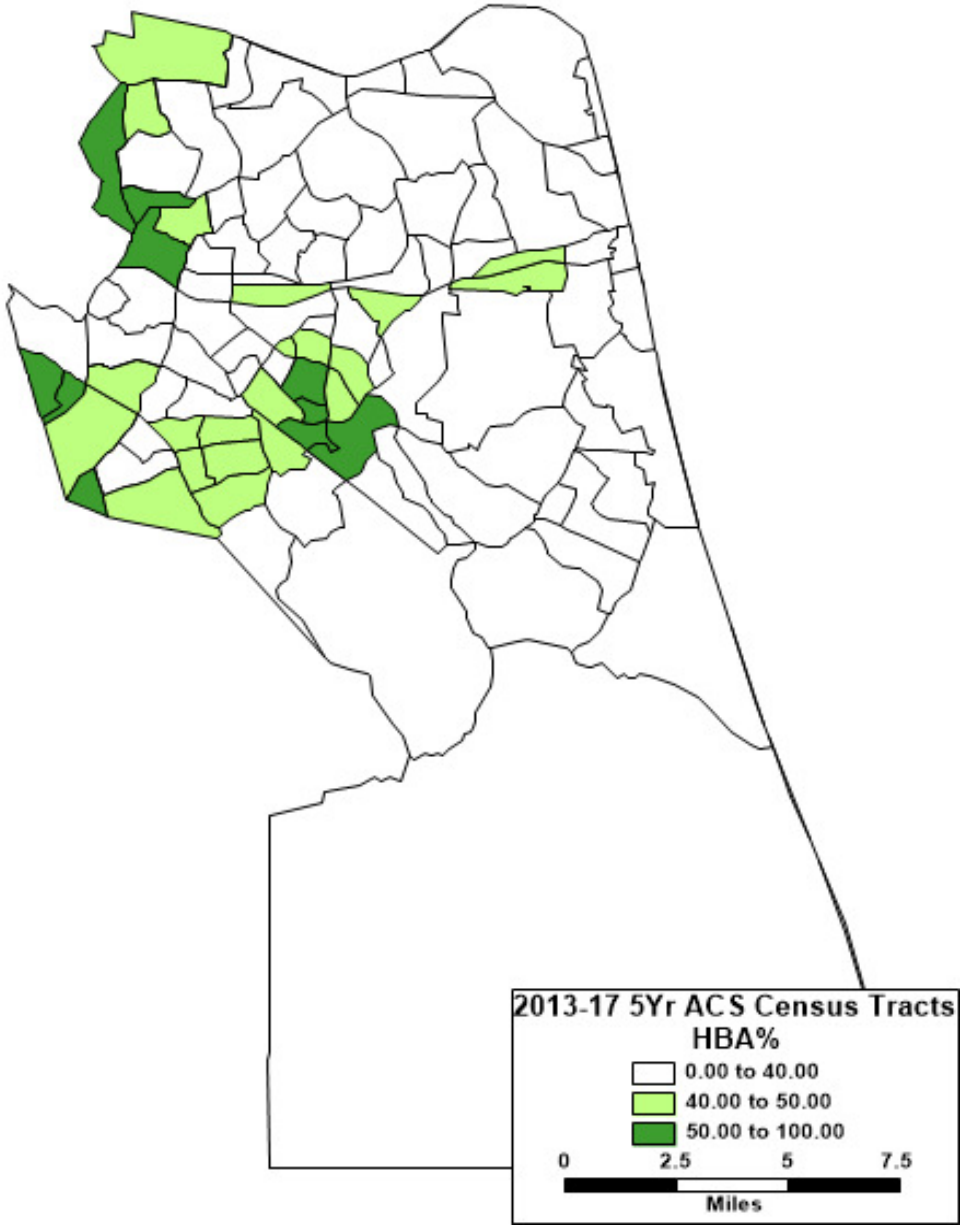
Majority HBA Census Tract Map

1990 & 2013-2017 5-Year ACS

Virginia Beach, VA

Majority HBA Census Tracts





Appendix I2

Illustrative Plan Socioeconomic Characteristics

District 1 - Majority HBA Census Tracts (2013-2017 5Yr ACS)

- 454.06, 458.09, 458.10, 460.13
-

AMERICAN FactFinder

S1903 | MEDIAN INCOME IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)

2013-2017 American Community Survey 5-Year Estimates

Note: This is a modified view of the original table.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Subject	Virginia Beach city, Virginia		Census Tract 454.06, Virginia Beach city, Virginia		Census Tract 458.09, Virginia Beach city, Virginia	
	Median income (dollars)		Median income (dollars)		Median income (dollars)	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Households	70,500	+/-1,124	56,370	+/-6,420	68,257	+/-9,283
White alone, not Hispanic or Latino	76,547	+/-1,239	51,986	+/-4,471	64,627	+/-14,386

Subject	Census Tract 458.10, Virginia Beach city, Virginia		Census Tract 460.13, Virginia Beach city, Virginia	
	Median income (dollars)		Median income (dollars)	
	Estimate	Margin of Error	Estimate	Margin of Error
Households	41,146	+/-11,416	54,414	+/-4,676
White alone, not Hispanic or Latino	57,045	+/-19,653	53,468	+/-12,607

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

When information is missing or inconsistent, the Census Bureau logically assigns an acceptable value using the response to a related question or questions. If a logical assignment is not possible, data are filled using a statistical process called allocation, which uses a similar individual or household to provide a donor value. The "Allocated" section is the number of respondents who received an allocated value for a particular subject.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
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4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
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6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

AMERICAN FactFinder

S1501 | EDUCATIONAL ATTAINMENT

2013-2017 American Community Survey 5-Year Estimates

Note: This is a modified view of the original table.

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Subject	Virginia Beach city, Virginia		Census Tract 454.06, Virginia Beach city, Virginia		Census Tract 458.09, Virginia Beach city, Virginia	
	Percent		Percent		Percent	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population 25 years and over	(X)	(X)	(X)	(X)	(X)	(X)
Less than 9th grade	2.0%	+/-0.2	4.8%	+/-3.2	0.7%	+/-1.0
9th to 12th grade, no diploma	4.6%	+/-0.3	8.5%	+/-4.4	5.5%	+/-3.0
High school graduate (includes equivalency)	21.9%	+/-0.6	30.6%	+/-4.8	22.4%	+/-5.6
Some college, no degree	26.1%	+/-0.6	21.1%	+/-5.3	35.0%	+/-6.3
Associate's degree	10.5%	+/-0.4	12.6%	+/-3.2	13.0%	+/-5.6
Bachelor's degree	22.7%	+/-0.5	16.8%	+/-4.7	17.8%	+/-4.9
Graduate or professional degree	12.1%	+/-0.4	5.7%	+/-1.9	5.6%	+/-3.0
Percent high school graduate or higher	93.4%	+/-0.3	86.7%	+/-5.3	93.9%	+/-3.1
Percent bachelor's degree or higher	34.8%	+/-0.6	22.4%	+/-5.0	23.4%	+/-5.7
White alone, not Hispanic or Latino	(X)	(X)	(X)	(X)	(X)	(X)
High school graduate or higher	95.3%	+/-0.3	92.7%	+/-4.5	98.6%	+/-2.2
Bachelor's degree or higher	37.7%	+/-0.8	22.0%	+/-7.0	26.9%	+/-8.7

Subject	Census Tract 458.10, Virginia Beach city, Virginia		Census Tract 460.13, Virginia Beach city, Virginia	
	Percent		Percent	
	Estimate	Margin of Error	Estimate	Margin of Error
Population 25 years and over	(X)	(X)	(X)	(X)
Less than 9th grade	6.4%	+/-5.3	1.5%	+/-1.2
9th to 12th grade, no diploma	7.2%	+/-3.7	4.3%	+/-2.5
High school graduate (includes equivalency)	29.3%	+/-7.3	30.8%	+/-6.2
Some college, no degree	28.2%	+/-6.9	24.0%	+/-5.1
Associate's degree	11.4%	+/-3.6	12.8%	+/-3.6
Bachelor's degree	16.7%	+/-6.2	16.6%	+/-4.0
Graduate or professional degree	0.8%	+/-0.9	10.0%	+/-2.9
Percent high school graduate or higher	86.4%	+/-6.9	94.2%	+/-2.5
Percent bachelor's degree or higher	17.5%	+/-6.4	26.6%	+/-4.8
White alone, not Hispanic or Latino	(X)	(X)	(X)	(X)
High school graduate or higher	94.2%	+/-5.5	94.5%	+/-2.7
Bachelor's degree or higher	23.3%	+/-11.0	27.0%	+/-7.4

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

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Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

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AMERICAN FactFinder

S1701

POVERTY STATUS IN THE PAST 12 MONTHS

2013-2017 American Community Survey 5-Year Estimates

Note: This is a modified view of the original table.

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Subject	Virginia Beach city, Virginia		Census Tract 454.06, Virginia Beach city, Virginia		Census Tract 458.09, Virginia Beach city, Virginia	
	Percent below poverty level		Percent below poverty level		Percent below poverty level	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population for whom poverty status is determined	8.0%	+/-0.5	8.4%	+/-3.5	1.5%	+/-1.5
White alone, not Hispanic or Latino	5.8%	+/-0.5	7.5%	+/-4.5	0.0%	+/-1.4

Subject	Census Tract 458.10, Virginia Beach city, Virginia		Census Tract 460.13, Virginia Beach city, Virginia	
	Percent below poverty level		Percent below poverty level	
	Estimate	Margin of Error	Estimate	Margin of Error
Population for whom poverty status is determined	39.1%	+/-9.3	11.4%	+/-5.5
White alone, not Hispanic or Latino	11.4%	+/-11.0	11.0%	+/-9.1

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

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AMERICAN FactFinder

B25077

MEDIAN VALUE (DOLLARS)

Universe: Owner-occupied housing units

2013-2017 American Community Survey 5-Year Estimates

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	Virginia Beach city, Virginia		Census Tract 454.06, Virginia Beach city, Virginia		Census Tract 458.09, Virginia Beach city, Virginia	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Median value (dollars)	267,300	+/-2,392	238,600	+/-47,983	199,000	+/-13,847

	Census Tract 458.10, Virginia Beach city, Virginia		Census Tract 460.13, Virginia Beach city, Virginia	
	Estimate	Margin of Error	Estimate	Margin of Error
Median value (dollars)	144,400	+/-13,583	163,000	+/-22,775

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Appendix I3

Illustrative Plan Socioeconomic Characteristics

District 2 - Majority HBA Census Tracts (2013-2017 5Yr ACS)

- 402, 404.02, 406, 462.20, and 462.21

AMERICAN FactFinder

S1903

MEDIAN INCOME IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)

2013-2017 American Community Survey 5-Year Estimates

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Subject	Virginia Beach city, Virginia		Census Tract 402, Virginia Beach city, Virginia		Census Tract 404.02, Virginia Beach city, Virginia	
	Median income (dollars)		Median income (dollars)		Median income (dollars)	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Households	70,500	+/-1,124	46,952	+/-5,406	41,852	+/-9,953
White alone, not Hispanic or Latino	76,547	+/-1,239	53,177	+/-8,787	55,516	+/-12,877

Subject	Census Tract 406, Virginia Beach city, Virginia		Census Tract 462.20, Virginia Beach city, Virginia		Census Tract 462.21, Virginia Beach city, Virginia	
	Median income (dollars)		Median income (dollars)		Median income (dollars)	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Households	53,007	+/-13,152	41,898	+/-9,854	54,076	+/-8,769
White alone, not Hispanic or Latino	71,027	+/-9,929	55,018	+/-18,234	58,542	+/-16,490

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7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
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AMERICAN FactFinder

S1501 | EDUCATIONAL ATTAINMENT

2013-2017 American Community Survey 5-Year Estimates

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Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Subject	Virginia Beach city, Virginia		Census Tract 402, Virginia Beach city, Virginia		Census Tract 404.02, Virginia Beach city, Virginia	
	Percent		Percent		Percent	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population 25 years and over	(X)	(X)	(X)	(X)	(X)	(X)
Less than 9th grade	2.0%	+/-0.2	5.5%	+/-3.3	2.3%	+/-2.0
9th to 12th grade, no diploma	4.6%	+/-0.3	9.3%	+/-3.9	12.8%	+/-4.0
High school graduate (includes equivalency)	21.9%	+/-0.6	27.6%	+/-5.4	23.7%	+/-6.4
Some college, no degree	26.1%	+/-0.6	28.9%	+/-5.4	29.5%	+/-5.4
Associate's degree	10.5%	+/-0.4	13.0%	+/-4.5	12.9%	+/-4.9
Bachelor's degree	22.7%	+/-0.5	9.4%	+/-3.3	14.8%	+/-4.6
Graduate or professional degree	12.1%	+/-0.4	6.3%	+/-2.7	4.0%	+/-2.5
Percent high school graduate or higher	93.4%	+/-0.3	85.2%	+/-5.6	84.9%	+/-3.9
Percent bachelor's degree or higher	34.8%	+/-0.6	15.7%	+/-3.9	18.9%	+/-5.0
White alone, not Hispanic or Latino	(X)	(X)	(X)	(X)	(X)	(X)
High school graduate or higher	95.3%	+/-0.3	89.8%	+/-5.7	93.0%	+/-5.8
Bachelor's degree or higher	37.7%	+/-0.8	10.8%	+/-7.7	26.2%	+/-10.9

Subject	Census Tract 406, Virginia Beach city, Virginia		Census Tract 462.20, Virginia Beach city, Virginia		Census Tract 462.21, Virginia Beach city, Virginia	
	Percent		Percent		Percent	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population 25 years and over	(X)	(X)	(X)	(X)	(X)	(X)
Less than 9th grade	1.0%	+/-1.5	2.7%	+/-2.2	1.9%	+/-1.7
9th to 12th grade, no diploma	3.9%	+/-2.7	4.3%	+/-2.1	12.3%	+/-6.2
High school graduate (includes equivalency)	21.1%	+/-5.0	24.1%	+/-5.2	21.9%	+/-5.8
Some college, no degree	41.6%	+/-7.2	35.6%	+/-7.2	38.2%	+/-7.1
Associate's degree	13.5%	+/-3.8	8.8%	+/-4.2	12.8%	+/-5.3
Bachelor's degree	12.8%	+/-4.2	14.3%	+/-4.2	9.5%	+/-3.8
Graduate or professional degree	5.9%	+/-2.9	10.2%	+/-4.2	3.3%	+/-2.3
Percent high school graduate or higher	95.1%	+/-3.1	93.0%	+/-3.5	85.7%	+/-6.0
Percent bachelor's degree or higher	18.8%	+/-5.4	24.5%	+/-6.5	12.8%	+/-4.6
White alone, not Hispanic or Latino	(X)	(X)	(X)	(X)	(X)	(X)
High school graduate or higher	97.6%	+/-3.2	95.5%	+/-3.1	78.7%	+/-17.2
Bachelor's degree or higher	17.3%	+/-6.5	28.0%	+/-9.2	19.0%	+/-10.6

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Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

AMERICAN FactFinder

S1701 | POVERTY STATUS IN THE PAST 12 MONTHS

2013-2017 American Community Survey 5-Year Estimates

Note: This is a modified view of the original table.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Subject	Virginia Beach city, Virginia		Census Tract 402, Virginia Beach city, Virginia		Census Tract 404.02, Virginia Beach city, Virginia	
	Percent below poverty level		Percent below poverty level		Percent below poverty level	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population for whom poverty status is determined	8.0%	+/-0.5	19.9%	+/-6.1	14.9%	+/-6.2
White alone, not Hispanic or Latino	5.8%	+/-0.5	8.6%	+/-4.9	9.3%	+/-5.8

Subject	Census Tract 406, Virginia Beach city, Virginia		Census Tract 462.20, Virginia Beach city, Virginia		Census Tract 462.21, Virginia Beach city, Virginia	
	Percent below poverty level		Percent below poverty level		Percent below poverty level	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population for whom poverty status is determined	20.2%	+/-8.5	12.3%	+/-4.1	18.1%	+/-9.8
White alone, not Hispanic or Latino	11.9%	+/-9.5	6.7%	+/-4.4	2.6%	+/-4.3

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

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AMERICAN FactFinder

B25077

MEDIAN VALUE (DOLLARS)

Universe: Owner-occupied housing units

2013-2017 American Community Survey 5-Year Estimates

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	Virginia Beach city, Virginia		Census Tract 402, Virginia Beach city, Virginia		Census Tract 404.02, Virginia Beach city, Virginia	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Median value (dollars)	267,300	+/-2,392	124,600	+/-14,726	164,700	+/-8,297

	Census Tract 406, Virginia Beach city, Virginia		Census Tract 463.20, Virginia Beach city, Virginia		Census Tract 463.21, Virginia Beach city, Virginia	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Median value (dollars)	153,400	+/-14,439	211,000	+/-12,003	148,300	+/-10,154

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